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ECONOMIC SURVEY OF THE BITUMINOUS COAL INDUSTRY UNDER FREE COMPETITION AND CODE REGULATION

By
F. E. Berquist
and
Associates

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The soft coal miners have always bitterly resented the coal and iron police. During the period of a strike, the police obeyed their employers if they were ordered to break up picket lines, meetings or marches. Testimony regarding brutal and unlawful attacks by coal and iron police upon coal miners may be found in both volumes of the Senate hearings concerning the investigation of conditions in the coal fields of Pennsylvania, West Virginia, and Ohio. (*) In times of peace, the police in the soft coal company towns were always present with uniform and gun or riot stick and were a constant reminder of the employer's power. Their duties were to patrol the company towns, to do ordinary police work there and to guard the company property both in the town and at the mine. The company owns every square foot of land in the company town and many of the leases provide that workers may be evicted at any time. Since the coal and iron police were in company pay under company orders, they were compelled to side with their employers in case of strike. The workers, therefore, regarded the coal and iron police as their enemies.

The publicity resulting from the fatal beating of a miner by a drunken coal and iron police led to a storm of protest. (**) Bills, backed by organized labor, were introduced in the State Legislature which sought to deprive the coal and iron police of all powers except the power to guard property. The bill, which after amendment, was finally enacted on April 18, 1929, has been referred to above.

Governor Pinchot on June 30, 1931, revoked all outstanding coal and iron police commissions, which then totaled 1,015. The exact number of men engaged in policing the bituminous industry in Pennsylvania is difficult to determine. When the commissions were revoked, many employers adopted the company deputy sheriff system, which will be discussed below. The Governor's Committee which investigated special policing in industry recommended that the Industrial Police Act of 1929 be repealed. This recommendation was acted upon early in 1935.

(b) Company Deputy Sheriffs. Protection of property and maintenance of order are duties which devolve upon those operators whose mining activities center in their own company towns. In the isolated areas where the mining camp population is made up of a mixture of native whites, blacks, and foreign born, the peace of the community is subject to frequent disturbance. Tax revenue in these areas is often insufficient to maintain a large force of peace officers. This situation gave rise to the mine guard system which provides that an officer be appointed by the courts or the county sheriff and that he receive compensation from the operators. The mine guard system may be said to result from the inability of local government to maintain law and order. (***)

Public protest against the deputy sheriff system in Logan County, West Virginia, resulted in a change in the method of paying the

(*) Hearings on Senate Resolution 105, 70th Congress, 1st Session, 1928.

(**) John Barkoski of Tyre in Allegheny County was beaten to death on February 10, 1929.

(***) United States Coal Commission Report, 1925, Part I, p. 172. Also Pennsylvania Report on Special Policing in Industry, p. 16.

guards. (*) The operators loaned the County an amount equal to the extra cost of maintenance of special deputies, without any serious expectation of repayment.

The question of the mine guard system is very closely related to the matter of civil liberties in the coal mining communities. Private policing of an operator's property was especially common in those areas which were involved in the union vs. non-union controversy. Testimony has been presented upon numerous occasions to the effect that the primary duty of company deputies was to prevent any efforts to unionize a mine. (**) In some instances mine guards were used to prevent peaceful assemblages and to intimidate dissatisfied miners. A recent investigation of conditions in the Harlan, Kentucky, coal fields disclosed that there existed "a virtual reign of terror, financed in general by a group of coal-mine operators in collusion with certain public officials; the victims of this reign of terror are the coal miners and their families". (***) The report went on to say that "many are beaten and mistreated in most unjust and un-American methods by some operators using certain so-called 'peace officers' to carry out their desires".

The workers generally hate the company deputies because they are armed and uniformed men, employed not by the public but by the industry. The mine guard system may be said to engender discontent among miners which is often expressed in violence during strike periods. In case of a strike, the deputy is bound to use his authority, and if necessary his force, in the interests of his employer and to break the strike. This condition was illustrated by the events which transpired during the labor disturbances in Fayette County, Pennsylvania, in the Summer of 1933. (****) When Governor Pinchot revoked all the coal and iron police commissions on June 30, 1931, a number of employers procured for their private police, commissions as deputy sheriffs. The deputies received their commissions from the sheriff, but they were selected by the company subject to the sheriff's veto. The violent outbursts during the strike of 1933 resulted in the Governor sending a battalion of the National Guard to keep order.

The United States Coal Commission as well as other investigating groups have condemned the company deputy sheriff system. A Pennsylvania report stated that, "To abolish the company deputy system is to strike at by far the most serious present evil. If all the deputy sheriffs must be paid by the County, they will be responsible to all the citizens of the County". (*****)

(*) Ibid, supra, p. 174

(**) See U. S. Coal Commission Reports and Senate Hearings on Conditions in coal fields, etc.

(***) Report of Investigation Committee in Harlan County Coal Fields to Governor Laffoon, Frankfort, Kentucky, June 7, 1935.

(****) Report on Special Policing in Industry, op. cit.

(*****) Ibid, supra, p. 18.

3. SEASONAL AND CYCLICAL ASPECTS OF EMPLOYMENT

The Bituminous Coal Industry has long been characterized by a short average working year, intermittent employment, and seasonal variation in activity. Although the seasonal and cyclical factors are very important in their effects on employment, other conditions have also been significant from time to time in the past. For example, car shortages prior to 1923 limited the opportunities for employment. Likewise general strikes or suspensions of mining activity in the organized fields have occurred at the termination of many of the biennial wage agreements. The curve of bituminous production is characterized in the "even" years by peaks and valleys arising from such stoppages. In the period before the war it was customary for the mines in the central competitive field to close down almost completely during one, two, or three months while a new working agreement was being framed. Wide spread stoppages reduced the average number of days worked by the mines.

Another factor which influenced opportunity for employment, but which was neither seasonal nor cyclical in character was the competitive struggle between the predominately union and non-union areas following the initiation of the Jacksonville Agreement, April, 1924. Union operators, bound by higher wage scales, ($7.50 a day as against $4.00 to $5.00 in the non-union fields) found their production costs higher than that of the non-union competitors and so were faced with business losses because of the higher prices. Decreases in orders for coal produced under union contract meant lowered average days worked by mines in the organized fields. This situation is clearly illustrated in the following table which compared the average tipple time for two groups of states east of the Mississippi River from 1919 to 1933. Group A States represent the predominately union areas; Pennsylvania, Ohio, Illinois, and Indiana (although Pennsylvania began to break from the union in 1925 and Ohio was non-union by 1927). Group B States represent the non-union areas (although northern West Virginia operated under contract until 1925 and then abrogated its agreement while western Kentucky's agreement terminated in 1925). It will be noted from the table that the spread in working time between North and South was greatest during the period of the Jacksonville Agreement.

TABLE I

COMPARISON OF AVERAGE DAYS WORKED PER YEAR
IN TWO GROUPS OF STATES EAST OF THE MISSISSIPPI RIVER

1919 - 1933

Year	Average days worked in North - Group A 1/	Average days worked in South - Group B 2/
1919	189	200
1920	223	199
1921	147	151
1922	133	146
1923	183	167
1924	163	183
1925	180	221
1926	198	243
1927	160	236
1928	192	220
1929	210	239
1930	184	198
1931	160	171
1932	139	162
1933	158	187

SOURCE: U. S. Bureau of Mines

1/ Group A includes:

Pennsylvania
Ohio
Illinois
Indiana

2/ Group B includes:

West Virginia
Virginia
Kentucky

These latter situations which have been discussed illustrate sporadic conditions which arise out of the human element in the industry and are subject to control. Seasonal and cyclical factors affecting employment, however, recur periodically and are in a large measure beyond the control of any single group of individuals in the industry or even of the industry as a whole.

The number of days a minor is employed has a vital relationship to his earnings, to the wage rate, and to the cost of coal. Every day which the minor does not work, either because the mine is shut down or because of his own absance, means a lowered living standard for the miner. A higher wage rate which seeks to compensate for a short working year means high cost coal. Fluctuations in working time reflect variations in production and are significant to the min worker, the operator, and the consumer.

The average number of days worked by the mines in each year is a statistical measure of the employment afforded by bituminous coal mining. It does not, however, show the working time of the mine worker except in a general way. While it may reflect the cyclical factor -- prosperous or depressed conditions in industry and the consequent demand for coal, it does not show the variations which occur within the year -- from month to month -- and, therefore, does not indicate seasonality. The data are based upon the information furnished by the operators to the U. S. Bureau of Mines. The operators are requested to state the number of full days the mine (tipple) operated during the year (parts of days should be reduced to equivalent in full days) (*). In some instances, however, an operator may fail to reduce the fractional days to the equivalent full-time days and so reports mine "starts" rather than "days worked". Generally speaking, this error is not serious.

Tipple time operation, while perhaps the best available indicator of the time during which the capital and working force about the mines are engaged in production, is not strictly accurate as to the amount of employment offered by the mines. The underground force may be engaged in cutting and loading coal every day in the week, while the mines may dump coal over the tipple only a few days in the week. Under these circumstances the tipple time tends to exaggerate the hourly or daily productivity.

The average number of days worked in a particular area is derived from the figure for each mine multiplied by the number of men employed at the mine, and the sum of these products for all the mines in the area is divided by the sum of the men employed. This weighted average is essential in order that the real conditions of employment may not be distorted by the small mines which are many in number but which provide only a small portion of the employment. However, this average figure fails to disclose the wide diversity in the number of days worked between mines and areas.

Prior to the N.R.A. a full time year in the bituminous coal mines was considered as 308 days, allowing for 52 Sundays and 5 holidays (**). During the year 1934, a full year under N.R.A., it was estimated that the maximum number of working days amounted to 258, allowing for a 5 day work week. The average annual operating time of mines for the period 1890 to 1912 was 213 days; from 1912 to 1922, 206 days; and from 1923 to 1932 (last full year before N.R.A.) only 186 days. The record of the industry when compared with the full work year (308 days) shows that from 1890 to 1912 miners worked only 69.1 per cent of full time; from 1912 to 1922, 67 per cent; from 1923 to 1932, 60.4 per cent.

(*) Coal in 1922, page 492.

(**) New Year's Day, Memorial Day, July 4th, Thanksgiving, Christman. Although this list is typical, most of the holidays named are not universally observed. On the other hand, days not mentioned are observed in many localities.

TABLE II

Number of Men Employed and Average Number of Days Mines Operated, 1905 - 1934
(Source: U. S. Bureau of Mines)

Year	Average No. Days Mine Operated 1/	Number of Men Employed 2/	Index of No. Employed
1905	211	450,629	91.6
1906	213	478,425	95.1
1907	234	513,258	102.0
1908	193	516,264	102.6
1909	209	499,754	99.4
1910	217	543,000	108.0
1911	211	549,775	109.3
1912	223	548,632	109.1
1913	232	571,882	113.7
1914	195	583,506	116.0
1915	203	557,456	110.8
1916	230	561,102	111.6
1917	243	603,143	119.9
1918	249	615,305	122.3
1919	195	621,998	123.7
1920	220	639,547	127.1
1921	149	663,754	132.0
1922	142	667,958	136.8
1923	179	704,793	140.1
1924	171	619,604	123.2
1925	195	588,493	117.0
1926	215	593,647	118.0
1927	191	593,918	118.1
1928	203	522,130	103.8
1929	219	502,993	100.0
1930	187	493,202	98.1
1931	160	450,186	89.5
1932	146	406,380	80.8
1933	167	418,703	83.2
1934	178	458,011	91.1

1/ Average weighted on basis of number of men employed at the mines.

2/ The number reported represents the total of the numbers employed at individual mines whether operated for 20, 50, 100, 300, or other number of days during the year. Thus, for a mine which operated for only a part of one month and was idle the remainder of the year, the number of men employed for such time is included in the total for the year on the same basis as if the men had been employed throughout the year. The number reported by the Bureau of Mines does not represent, therefore, the average employment throughout the year, but rather the number employed in the year, whether for the whole your or for only a short period.

The effect of the cyclical factor on working time may be noted for example in the year 1921 which was featured by the post war depression in industry generally. Bituminous mines worked only 149 days in 1921 which was only 72.3 per cent of the average for 1912 to 1932. It should be pointed out that the short working time in the following year, 1922 (142 days) is not attributable to a seasonal or cyclical factor, but rather to the general suspension which lasted from April 1 to August 19. Again, the rise in the number of days worked in 1926 may be attributed to the influence of the anthracite strike (ended in February) and to the British miners' strike. The year 1929, a "boom" year for industry generally and of improvement for bituminous coal (output only 7.2 per cent less than peak established in 1918) afforded but 219 working days. The effect of the general business depression on the bituminous coal industry is clearly reflected in the declining number of days worked: 1930, it was 187 days; 1931, 160 days; 1932, 145 days; and 1933 (affected by N.R.A.), 167 days.

These data for the Industry as a whole are significant in comparing one year with another; they do not, however, indicate the fluctions in employment opportunities which take place within the year and even within a month. Moreover, the data do not disclose the variations which exist in one state as compared with another state. The following table indicates the average number of days worked in the ten leading coal producting states from 1912 to 1934:

TABLE III

AVERAGE NUMBER OF DAYS WORKED PER YEAR
TEN LEADING COAL PRODUCING STATES 1912 - 1934

Source: U.S. Bureau of Mines

Year	Penn.	W.Va.	Ill.	Ken.	Ohio	Ind.	Ala.	Va.	Iowa	Tenn.
1912	252	266	194	201	201	182	245	251	188	234
1913	267	234	189	212	206	190	255	280	195	241
1914	214	201	173	187	108	168	226	235	204	220
1915	226	208	179	186	142	179	223	235	220	220
1916	259	237	198	208	197	187	262	272	202	239
1917	261	225	243	214	210	221	273	273	251	241
1918	269	238	238	230	223	227	278	277	245	265
1919	218	200	160	189	164	148	239	247	176	201
1920	244	198	213	182	188	192	247	262	250	234
1921	151	149	152	152	134	128	166	166	148	154
1922	194	143	120	140	100	110	215	198	131	163
1923	213	169	158	152	150	136	232	212	181	183
1924	180	182	148	184	143	136	220	226	161	159
1925	200	225	161	206	151	159	246	254	153	211
1926	224	247	172	230	159	175	266	263	183	234
1927	203	235	114	237	98	120	231	238	114	235
1928	218	223	156	212	171	150	222	226	175	226
1929	230	247	177	222	201	172	231	249	195	228
1930	198	204	156	187	189	157	189	200	155	196
1931	169	176	136	159	174	146	136	175	142	169
1932	153	169	107	154	126	131	106	144	151	148
1933	162	197	138	170	169	160	146	185	138	162
1934	179	196	160	180	167	171	185	200	156	185

The next table, showing the number of employees and theaverage days worked by states for the period 1929 to 1933, illustrates clearly the effects of the general business depression upon employment in bituminous coal and also upon the working time. The downswing of the business cycle brought sharp declines in mine worker employment. For example, in 1932 as compared with 1929, the number of employees in Pennsylvania had declined approximately 27,000; in West Virginia, 13,000; in Kentucky 16,000; and in Illinois, 9,000. These figures based upon reports made by operators to the U. S. Bureau of Mines do not disclose accurately the serious labor situation in coal mining which developed out of the depression. Moreover, it must be remembered that declining employment characterized the industry long beofre the depression -- ever since 1923. (See Chapter VI.)

The coal industry is accustomed to intermittent operations and its adjustments to demand fluctuations are made not by cutting down the number of men on the payroll as such as by working fewer days. The normal working force connected with a mine ordinarily is employed whenever the mine operates. The number of days worked reflects irregularity of operation and definitely influences the amount of employment offered. The effect of the recent depression upon employment opportunity is shown by the number of days worked in Pennsylvania declined 76 days or 33 per cent; in West Virginia, 79 days or 32 per cent; in Kentucky 67 days or 30 per cent; and in Illinois 65 days or 37 per cent. (See Table II 5.)

The data showing the average number of days worked by mines, even when broken down by states, do not portray the variations which exist from mine to mine. It is necessary to consider not only the number of mines which work a specified number of days, but also the production of these mines (*).

As has been stated the average number of days worked by mines do not necessarily represent the average number of days worked by the men in the mines. Mine working time as a measure of employment must take into consideration the percentage of the employees working a specified number of days in the year. The following table, which shows the per cent of men employed in bituminous coal mines working specified number of days, serves to illustrate how widely different may be the opportunities for work among the various mine workers:

(*) For a clear explanation of the significance of average number of days worked data, see "Coal in 1922", pages 492 -496.

TABLE IV

BITUMINOUS COAL

II 5 (Interstate)

NUMBER OF EMPLOYEES AND AVERAGE DAYS WORKED BY STATES
1929 - 1933

	1929		1930		1931		1932		1933	
	Number of Employees	Average Days Worked	Number of Employees	Average Days Worked	Number of Employees	Average Days Worked	Number of Employees	Average Days Worked	Number of Employees	Average Days Worked
Alabama	25,208	231	24,393	189	22,973	136	20,443	107	18,237	148
Arizona	39	137	24	196	27	115	17	251	23	268
Arkansas	4,299	146	4,626	115	4,733	95	4,325	92	3,671	94
California, Idaho, Oregon,& Nevada	42	113	138	74	116	86	141	69	58	79
Colorado	12,057	187	11,091	169	10,028	142	8,749	142	7,908	148
Georgia	102	260	60	71	62	180	64	208	93	234
Illinois	56,725	177	53,603	156	49,685	136	47,597	112	44,145	141
Indiana	15,250	172	13,881	157	12,311	146	10,639	145	11,199	163
Iowa	7,295	195	7,901	155	7,897	142	8,086	151	7,695	138
Kansas	5,139	160	4,855	126	3,813	123	3,691	130	3,809	140
Kentucky	58,649	222	56,674	187	47,766	159	42,267	155	43,717	170
Maryland	3,289	246	3,299	197	3,224	190	3,105	150	2,880	172
Michigan	1,336	217	1,294	187	1,372	96	940	159	1,186	130
Missouri	5,618	185	5,700	166	5,362	142	5,677	161	5,690	150
Montana	2,283	189	2,085	172	1,672	153	1,525	145	1,324	166
New Mexico	3,233	214	2,902	176	2,830	145	2,602	127	2,340	168
North Carolina	160	260	70	290	32	83	26	55	10	175
North Dakota	1,421	192	1,258	180	1,300	166	1,311	186	1,301	173
Ohio	25,399	201	25,574	189	25,085	174	23,280	127	25,442	169
Oklahoma	6,321	178	5,424	148	4,634	115	3,063	120	2,974	128
Pennsylvania	131,774	230	130,150	198	116,726	169	104,532	154	115,453	162
South Dakota	32	127	43	109	56	127	84	126	147	100
Tennessee	7,619	228	7,535	196	7,448	171	7,525	148	7,051	161
Texas	1,313	212	1,305	181	1,148	140	899	152	803	162
Utah	3,458	211	3,504	168	3,268	140	2,842	176	2,906	176
Virginia	12,053	249	11,709	200	11,357	175	10,376	144	9,761	184
Washington	2,946	227	2,801	205	2,662	170	2,816	161	2,655	168
West Virginia	104,942	247	105,988	204	97,787	176	85,765	168	92,472	198
Wyoming	4,839	230	5,216	188	4,759	164	4,173	150	3,753	170
Total Bituminous	502,841	219 a/	493,103	187 a/	450,133	160 a/	406,260	146 a/	418,603	167 a/

Source: "Coal in 1929, 1930, 1931, 1932" - United States Bureau of Mines annual reports.

a/ Includes Alaska.

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TABLE V

PER CENT OF MEN EMPLOYED IN BITUMINOUS COAL MINES WORKING SPECIFIED NUMBER OF DAYS IN CERTAIN YEARS 1/

Per Cent of Men Employed

Number days worked	1905 Absolute	1905 Cumulative	1913 Absolute	1913 Cumulative	1914 Absolute	1914 Cumulative
Less than 20 days	.3	.3	.2	.2	.3	.3
20-39	.8	1.1	.4	.6	1.4	1.7
40-59	1.3	2.4	1.0	1.6	2.6	4.3
60-79	1.8	4.2	1.1	2.7	2.4	6.7
80-99	1.7	5.9	1.1	3.8	2.0	8.7
100-119	2.7	8.6	1.2	5.0	3.0	11.7
120-139	3.4	12.0	2.5	7.5	5.4	17.1
140-159	5.1	17.1	2.9	10.4	7.7	24.8
160-179	6.3	23.4	4.5	14.9	9.5	34.3
180-199	10.0	33.4	8.3	23.2	12.1	46.4
200-219	17.9	51.3	12.2	35.4	14.1	60.5
220-239	12.4	63.7	13.4	48.8	15.3	75.8
240-259	13.4	77.1	12.8	61.6	10.2	86.0
260-279	10.0	87.1	14.3	75.9	7.2	93.2
280-299	6.2	93.3	15.6	91.5	4.8	98.0
300 & over	6.7	100.0	8.5	100.0	2.0	100.0
Total No. employed	460,500		571,079		584,180	
Avg. No. days worked	211		252		195	

Days worked	1916 Absolute	1916 Cumulative	1917 Absolute	1917 Cumulative	1918 Absolute	1918 Cumulative	1921 Absolute	1921 Cumulative
Less than 20 days	.4	.4	.2	.2	.1	.1	2.9	2.9
20-39	.8	1.2	.3	.5	.2	.3	4.1	7.0
40-59	.9	2.1	.6	1.1	.3	.6	4.2	11.2
60-79	1.1	3.2	.6	1.7	.4	1.0	5.4	16.6
80-99	.9	4.1	.7	2.4	.5	1.5	7.4	24.0
100-119	1.9	6.0	1.1	3.5	.9	2.4	8.3	32.3
120-139	2.0	8.0	1.4	4.9	1.1	3.5	12.4	44.7
140-159	2.9	10.9	2.5	7.4	1.9	5.4	11.4	56.1
160-179	4.3	15.2	3.9	11.3	2.8	8.2	10.3	66.4
180-199	8.3	23.5	6.5	17.8	4.6	12.8	9.6	76.0
200-219	13.5	37.0	10.3	28.1	8.9	21.7	8.3	84.3
220-239	14.2	51.2	10.6	38.7	12.8	34.5	5.1	89.4
240-259	13.7	64.9	15.3	54.0	17.5	52.0	4.3	93.7
260-279	11.8	76.7	15.8	69.8	17.3	69.3	2.5	96.2
280-299	11.1	87.8	19.2	89.0	20.6	89.9	2.5	98.7
300 & over	12.2	100.0	11.0	100.0	10.1	100.0	1.3	100.0
Total No. Employed	560,494		602,010		613,775		663,453	
Avg. No. days worked	230		243		249		149	

1/ Bureau of Mines, Coal in 1922.

Certain features peculiar to the bituminous coal industry make the industry highly seasonal. Its product is extremely bulky. As a practical matter, production does not begin at the mine until orders for coal are received. Coal cannot be warehoused or stored as can other commodities such as grain, lumber, steel, petroleum, clothing, food products, etc. Although a limited amount of coal can be and is stored, consumer demand dictates the forthcoming supply which must be available for immediate delivery if and when wanted. Storage of coal necessitates a heavy capital investment since labor and degradation costs are expensive items and also since freight charges incident to coal transportation as well as maintenance costs of storage facilities must be included.

The highly seasonal character of the industry has long been generally recognized. The U. S. Coal Commission stated that, "Seasonal production is the net resultant of a whole series of causes, at the bottom of which is seasonal buying and consumption, modified in every field and at almost every mine by conditions of market ability of the particular coals." (*) Not only is the industry seasonal, but an even wider seasonal variation exists in particular fields. The majority of the producing areas are at a low point in April, the beginning of the coal year, and rise to a peak in the fall or early winter. The seasonal trend of production for domestic heating is highly accentuated, while those fields producing chiefly industrial coals show less violent seasonal fluctuations (**).

While the fall and winter season is the peak period of employment in coal mining generally, it is interesting to note how particular producing areas are affected by particular seasonal situations. For example, it was stated that much of the product of Pittsburgh mines went west through the Great Lakes and as lake traffic was closed during several months in the winter, most of the mines were operated on short time during those months (***)

Accentuated seasonality is illustrated especially in the western states where poorer qualities of coal - subbituminous and lignite - are produced and where the tonnage is primarily for the domestic markets. These coals degrade rapidly upon exposure and are not suitable for storage. The table below shows the highly seasonal production which characterizes these western states:

(*) U. S. Coal Reports, page 229.

(**) See Coal in 1931, page 434, figure 26.

(***) Report on the Miners' Strike - Bituminous Coal Field in Westmoreland County, Pennsylvania, in 1910-11. House of Representatives, 62 Congress, 2nd Session, Document 847, page 34.

TABLE VI

MINIMUM AND MAXIMUM SPREAD IN PER CENT BETWEEN MONTHLY PRODUCTION OF BITUMINOUS COAL IN SIX WESTERN STATES, 1927 - 1931 1/

State	Least Spread Shown	Greatest Spread Shown	5 Year Avg. Spread
Washington	37	84	62
New Mexico	63	111	69
Wyoming	93	132	109
Montana	96	177	123
Colorado	102	226	156
Utah	116	365	206

1/ Based on Bureau of Mines Reports. Brief of Coal Operators located in Southern Portion of the State of Wyoming Relating to "Hours of Work" to be determined in Proposed Code for Bituminous Coal, Aug. 1, 1933.

Mine labor is profoundly influenced by the seasonal character of the industry. Operators objecting to reduction of hours in the work day have stated:

> "The unfortunate seasonal character of the coal industry necessitates the employee working at every available opportunity during the off-demand period, during which time men with families are compelled to receive credit from merchants who in a sense act as an income stabilizer for the men. Thereafter, when the season of heavier demand appears, the additional working time available enables them (if receiving a fair wage) to catch up on past indebtedness, closing the year with an earning equal to their necessary living costs. Deny this privilege and the employer is compelled to organize an additional force which either remains to dilute the average earnings of the regular force or otherwise when the demand falls off, they are turned loose on the community to shift for themselves. It should be kept in mind that coal mines are in the majority of cases located away from the great industrial centers where a diversity of employment exists." (*)

The fluctuations in monthly production reflect variations in man-days of employment. Monthly tonnage divided by the average output per man per day results in the approximate number of man-days of employment afforded by the industry. The following table shows the monthly fluctuations in man-days employment. In general, the difference between peak month and low month in each year approximates from 2 to 3 million man-days of employment. Assuming 25 working days in the month,

(*) Ibid, supra.

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TABLE VII

PRODUCTION AND CALCULATED MAN DAYS EMPLOYMENT 1/ 1929 - 1933, BY MONTHS

(Production Data from U. S. Bureau of Mines)

Month	1929		1930		1931		1932		1933	
	Tons	Man Days	Tons	Man Days	Tons	Man Days	Tons	Man Days	Tons	Man Days
January	52,398,000	10,803,711	50,414,000	9,963,241	38,949,000	7,348,868	28,261,000	5,413,985	27,868,000	5,830,126
February	48,137,000	9,925,155	40,060,000	7,916,996	31,737,000	5,988,113	28,383,000	5,437,356	27,915,000	5,839,958
March	40,068,000	8,261,443	36,230,000	7,160,079	34,226,000	6,457,736	32,676,000	6,259,770	24,413,000	5,107,322
April	37,565,000	7,745,361	36,318,000	7,177,470	28,777,000	5,429,623	20,568,000	3,940,230	19,805,000	4,143,305
May	40,908,000	8,434,639	36,413,000	7,196,245	28,613,000	5,398,679	18,627,000	3,568,391	22,531,000	4,713,598
June	38,771,000	7,994,021	34,145,000	6,748,024	29,491,000	5,564,340	17,984,000	3,445,211	25,461,000	5,326,569
July	41,379,000	8,531,753	35,158,000	6,948,221	30,103,000	5,679,811	18,093,000	3,466,092	29,675,000	6,208,159
August	44,695,000	9,215,464	36,117,000	7,137,747	30,858,000	5,822,264	22,786,000	4,365,134	34,421,000	7,201,046
September	45,334,000	9,347,216	39,126,000	7,732,411	32,255,000	6,085,849	26,662,000	5,107,663	29,715,000	6,216,527
October	52,174,000	10,757,526	44,714,000	8,836,759	36,075,000	6,806,604	33,110,000	6,342,912	30,294,000	6,337,657
November	46,514,000	9,590,515	38,609,000	7,630,237	30,426,000	5,740,755	31,038,000	5,945,977	31,184,000	6,523,849
December	47,046,000	9,700,206	40,222,000	7,949,012	30,579,000	5,769,623	31,522,000	6,038,697	30,349,000	6,349,163
TOTAL	534,989,000	110,307,010	467,526,000	92,396,442	382,089,000	72,092,265	309,710,000	59,331,418	333,631,000	69,797,280

1/ Based on Average Output per Man per Day, as follows:
1929 - 4.58 tons; 1930 - 5.06 tons; 1931 - 5.30 tons;
1932 - 5.22 tons; 1933 - 4.78 tons.

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this variation in man-days employment would mean a decline in employment of approximately 100,000 men in the low month as against the peak month. While this figure is a rough approximation, it does to some degree indicate the seasonal effect upon employment.

The employment data reported by the Bureau of Mines are on an annual basis and, therefore, are not suitable for the purpose of showing variations from month to month or the seasonal fluctuations. The United States Census of Mines and Quarries reported employment data by months and states for the year 1929. These data are shown in the following table. It must be remembered that the year 1929 represents a year of unusual industrial acitivity and thus tends to conceal the variations in employment as against some other year when production for domestic markets was relatively more important. Taking the average monthly employment during the year as a base equivalent to 100, it will be noted that the employment index for the industry as a whole declined from 105.27 in the peak month of February to 94.29 in the low month of June, or in terms of actual employment, a decline from a peak of 482,906 men to a low of 432,532 men -- some 50,384 men being temporarily displaced. More significant than an average figure for the industry as a whole for purposes of noting seasonal fluctuations, is the actual monthly employment and the monthly index for particular states. For example, the wide seasonal variations in employment in the western states may not seem important in terms of the tonnages involved but are very significant to the mine workers affected. Furthermore, were monthly employment data available for particular coal producing fields, the highly seasonal character of employment in the industry would be even more evident.
(See Table II 1a).

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TABLE VIII
BITUMINOUS COAL

Wage Earners by States and Months

(Continued)

State	Average Monthly Employment for the Year		January Number	January Same Year	January 1929 Basis	February Number	February Same Year	February 1929 Basis	March Number	March Same Year	March 1929 Basis	April Number	April Same Year	April 1929 Basis
United States														
1909	641,090	113.63	691,844	101.59	114.51	686,322	100.77	114.10	679,791	99.41	113.01	679,870	99.88	102.06
1919	693,170	115.63	736,105	106.15	122.57	707,046	102.13	117.67	693,563	100.06	115.50	679,373	97.43	112.09
1929	641,533	100.00	650,944	102.89	104.89	639,083	104.75	104.75	616,769	102.12	100.12	589,659	99.06	98.06
Penna. Anthracite														
1909	169,175	116.45	172,679	102.07	118.92	170,807	100.98	100.70	172,906	102.22	118.88	167,[illegible]	99.06	117.62
1919	147,378	103.80	146,041	99.43	102.48	145,985	99.06	102.83	143,427	97.33	101.25	148,[illegible]	96.42	99.90
1929	142,021	100.00	151,303	106.09	106.09	147,141	103.07	103.07	139,[illegible]	97.67	97.67	143,[illegible]	100.09	100.09
Bituminous Coal														
1909	511,915	116.39	[illegible]	100.98	113.40	513,975	100.39	118.05	506,489	99.00	116.90	501,[illegible]	96.46	109.06
1919	595,788	118.98	[illegible]	100.67	120.59	[illegible]	102.[illegible]	[illegible]	590,128	100.75	119.46	532,[illegible]	97.60	116.12
1929	496,738	100.00	503,163	100.89	100.89	[illegible]	103.07	103.07	474,790	103.50	103.50	444,0[illegible]	96.80	96.80
Bituminous Coal by States 1929														
Alabama	24,781	100.00	25,221		101.78	25,210		101.73	24,989		100.84	24,787		99.98
Arkansas	3,651	100.00	4,388		120.11	4,333		118.68	2,666		73.02	2,018		55.26
Colorado	10,420	100.00	12,463		119.61	12,195		117.03	11,418		109.58	9,101		87.34
Illinois	49,817	100.00	56,809		114.04	56,266		112.99	55,211		112.05	45,675		91.61
Indiana	12,660	100.00	14,157		110.80	14,167		110.17	13,774		107.21	12,455		96.30
Iowa	5,968	100.00	6,719		112.98	6,844		115.12	6,611		111.06	5,464		91.50
Kansas	3,405	100.00	4,169		122.44	4,186		122.94	4,000		117.47	2,524		74.13
Kentucky	54,904	100.00	56,243		102.44	56,696		103.26	55,745		101.53	53,570		97.57
Maryland	3,042	100.00	3,173		104.31	3,213		105.62	3,172		104.27	2,993		98.39
Missouri	4,657	100.00	5,276		113.29	5,265		113.14	4,931		105.88	4,305		92.44
Montana	1,983	100.00	2,338		117.90	2,323		117.15	2,197		110.79	1,879		94.76
New Mexico	3,120	100.00	3,449		110.50	3,469		111.19	3,470		111.22	3,296		105.64
North Dakota	994	100.00	1,230		123.74	1,142		114.89	1,044		105.03	699		70.32
Ohio	21,739	100.00	21,933		100.89	22,746		104.63	22,670		104.28	20,263		93.21
Oklahoma	4,716	100.00	5,676		120.40	5,751		122.19	4,313		91.45	3,377		71.61
Pennsylvania	121,800	100.00	122,450		101.00	124,629		103.00	124,980		103.19	121,875		100.78
Tennessee	6,622	100.00	6,606		99.75	6,660		100.56	6,318		95.94	6,476		94.80
Texas	1,235	100.00	1,262		102.19	1,229		99.51	1,227		99.35	1,219		98.70
Utah	3,452	100.00	4,060		117.61	3,938		114.08	3,465		100.38	3,078		89.17
Virginia	11,956	100.00	12,542		104.90	12,465		104.26	12,378		103.53	11,846		99.08
Washington	2,833	100.00	3,030		106.95	3,095		109.17	3,007		106.07	2,909		102.61
West Virginia	99,217	100.00	99,248		100.03	99,999		100.73	99,500		100.29	98,638		99.42
Wyoming	4,693	100.00	4,901		104.43	5,092		108.50	4,862		103.60	4,401		93.78
Other States	1,451	100.00	1,562		107.64	1,764		118.58	1,728		115.50	1,330		89.80

State	May Number	May Same Year	May 1929 Basis	June Number	June Same Year	June 1929 Basis	July Number	July Same Year	July 1929 Basis	August Number	August Same Year	August 1929 Basis
United States												
1909	646,998	94.93	107.39	652,894	99.06	102.50	659,434	96.41	109.63	667,186	97.95	118.10
1919	640,035	98.11	113.09	680,657	99.06	114.19	715,894	103.19	118.91	730,980	105.63	121.75
1929	579,782	95.30	96.38	564,681	93.87	93.87	563,983	93.66	93.66	586,814	97.42	97.42
Penna. Anthracite												
1909	166,007	99.52	117.69	167,715	99.73	118.15	167,166	99.41	117.06	169,466	97.80	115.09
1919	149,985	99.50	101.39	145,010	98.40	101.95	148,397	100.70	103.98	149,820	101.69	106.50
1929	144,770	101.30	101.30	132,155	92.99	92.99	127,183	89.41	89.41	140,835	98.62	98.62
Bituminous Coal												
1909	478,989	93.49	104.33	484,179	94.90	105.75	492,268	96.16	107.31	503,660	98.42	109.36
1919	535,110	90.04	116.65	541,647	95.04	118.07	566,497	103.97	123.98	583,128	106.24	127.12
1929	435,012	94.43	94.63	432,526	94.29	94.29	436,800	95.11	95.11	445,179	97.09	97.09
Bituminous Coal by States 1929												
Alabama	24,383		98.96	24,569		99.14	24,434		98.60	24,410		98.50
Arkansas	2,448		67.05	2,813		77.05	3,404		93.23	3,858		105.65
Colorado	8,593		82.47	8,269		79.36	8,497		81.55	9,029		86.61
Illinois	43,219		86.76	41,532		84.17	44,057		88.44	46,693		93.73
Indiana	12,738		99.63	12,895		99.61	12,099		93.62	11,628		90.42
Iowa	4,756		80.06	4,640		78.09	4,661		81.81	4,989		83.69
Kansas	2,380		69.90	2,499		73.40	2,664		78.23	3,083		94.07
Kentucky	50,735		96.09	50,340		95.33	50,865		96.39	54,065		98.47
Maryland	2,842		93.43	2,764		91.58	2,349		86.94	2,893		95.10
Missouri	4,131		88.72	3,973		85.31	3,949		84.71	4,422		94.93
Montana	1,590		80.12	1,532		77.26	1,567		79.02	1,692		85.53
New Mexico	3,244		103.97	3,120		100.00	3,082		98.78	2,936		94.10
North Dakota	665		66.90	689		69.32	708		71.23	743		74.75
Ohio	19,553		89.94	20,196		92.90	20,621		94.86	21,596		99.34
Oklahoma	3,079		65.29	3,557		75.42	4,064		86.60	4,715		99.98
Pennsylvania	119,971		99.15	118,519		97.95	118,223		97.70	118,316		97.78
Tennessee	6,682		100.97	6,787		98.61	6,990		96.60	6,483		97.96
Texas	1,210		97.98	1,222		98.83	1,232		99.76	1,215		98.38
Utah	3,078		89.17	2,819		79.17	2,764		80.07	2,992		86.65
Virginia	11,709		98.57	11,762		98.54	11,633		97.30	11,659		97.09
Washington	2,753		97.12	2,681		94.57	2,698		95.76	2,574		90.79
West Virginia	98,048		98.80	98,230		98.98	98,042		98.82	99,073		99.85
Wyoming	4,089		87.13	4,018		85.62	4,073		86.79	4,460		95.04
Other States	1,445		99.43	1,447		99.73	1,244		85.73	1,309		90.21

State	September Number	September Same Year	September 1929 Basis	October Number	October Same Year	October 1929 Basis	November Number	November Same Year	November 1929 Basis	December Number	December Same Year	December 1929 Basis
United States												
1909	625,[illegible]	100.61	113.91	700,935	103.90	117.15	710,592	105.76	119.75	729,273	107.07	121.89
1919	742,026	107.16	123.69	750,397	108.26	124.79	646,840	66.80	76.41	734,784	106.57	122.41
1929	600,082	99.76	99.76	614,774	102.20	102.20	620,660	103.41	103.41	623,605	103.64	103.64
Penna. Anthracite												
1909	169,760	97.98	116.08	169,729	118.06	118.06	170,390	100.90	119.30	164,993	99.06	116.38
1919	149,522	101.72	108.71	150,097	102.36	105.63	150,[illegible]	102.19	105.66	151,999	102.87	106.16
1929	144,195	100.98	100.98	146,305	100.65	102.95	146,798	102.75	102.75	147,042	103.11	103.12
Bituminous Coal												
1909	519,478	101.40	113.05	535,210	104.55	116.67	549,987	107.46	119.89	560,530	109.46	122.15
1919	593,304	108.70	129.58	599,550	105.89	130.70	306,860	56.40	67.00	587,159	107.98	127.99
1929	455,887	99.39	99.38	468,471	102.12	102.12	474,872	103.38	103.38	476,466	103.86	103.86
Bituminous Coal by States 1929												
Alabama	24,469		98.74	24,703		99.65	25,009		100.92	25,076		101.12
Arkansas	4,281		117.26	4,452		121.94	4,572		125.23	4,998		136.77
Colorado	10,528		101.04	11,281		108.26	11,780		113.05	12,003		115.19
Illinois	45,770		93.42	52,095		104.57	52,976		106.34	52,596		105.58
Indiana	12,288		95.55	12,862		100.00	12,940		100.59	13,648		106.88
Iowa	6,013		102.19	6,551		110.09	6,810		114.61	7,089		119.50
Kansas	3,555		104.42	3,846		112.95	3,887		114.16	3,969		116.56
Kentucky	54,664		99.56	56,462		102.84	56,873		103.58	56,971		103.76
Maryland	2,974		97.76	3,134		103.00	3,176		104.41	3,207		105.42
Missouri	4,672		100.43	4,796		102.98	4,986		107.06	5,175		111.12
Montana	1,989		100.29	2,230		112.46	2,261		114.02	2,196		110.74
New Mexico	2,754		88.30	2,842		91.09	2,830		90.71	2,947		94.46
North Dakota	1,095		110.16	1,277		128.47	1,327		133.50	1,303		131.09
Ohio	22,052		101.44	22,860		105.12	23,211		106.77	23,162		106.55
Oklahoma	5,183		108.63	5,570		118.11	5,630		119.38	5,675		120.33
Pennsylvania	118,570		97.99	119,900		99.09	121,619		100.51	122,953		101.61
Tennessee	6,659		100.56	7,013		102.80	7,096		105.99	7,046		105.51
Texas	1,214		98.30	1,232		99.76	1,276		103.16	1,286		104.13
Utah	3,423		99.16	3,771		109.24	4,037		116.95	4,327		125.35
Virginia	12,678		99.99	12,024		100.57	11,706		97.91	11,719		98.02
Washington	2,675		94.36	2,760		97.35	2,877		101.48	2,995		105.64
West Virginia	98,610		99.39	100,360		101.15	100,929		101.72	100,013		100.80
Wyoming	4,980		106.12	5,016		106.88	5,253		111.93	5,178		110.34
Other States	1,402		96.71	1,368		93.09	1,437		98.58	1,612		108.12

Source: United States Census of Mines and Quarries: 1929

The U. S. Bureau of Labor Statistics began a statistical series in 1929 showing the monthly index of employment in bituminous coal mining. The base used, equivalent to 100, was the average monthly employment during the year as shown by the Census of Mines and Quarries in 1929. This base figure was 458,732. The monthly employment indexes reported by the Bureau of Labor Statistics start from this base, but are adusted to the employment data reported by the mines to the Bureau. The Bureau of Labor Statistics estimates that approximately 65 per cent of the total estimated employment is now reported to it. The indexes of employment as shown by the Bureau of Labor Statistics since the inception of the series up to the last available report are shown in the table below:

TABLE IX

MONTHLY INDEXES OF EMPLOYMENT IN BITUMINOUS COAL MINING,
1929 - 1935
(U. S. Bureau of Labor Statistics)
1929 = 100

Month	1929	1930	1931	1932	1933	1934	1935
January	106.4	102.5	93.9	80.8	69.8	75.8	80.0
February	107.7	102.4	91.5	77.4	69.3	76.1	81.1
March	106.8	98.6	88.8	75.2	67.6	77.8	81.6
April	100.2	94.4	85.9	65.5	63.7	72.2	74.3
May	96.6	90.4	82.4	62.6	61.2	76.7	75.3
June	94.7	88.4	78.4	60.5	61.3	76.7	77.9
July	94.1	88.0	76.4	58.6	63.2	77.0	70.0
August	95.7	89.2	77.0	59.4	68.6	77.1	73.4
September	97.2	90.5	80.4	62.4	71.8	78.2	77.1
October	98.8	91.8	81.3	67.0	68.0	79.3	74.3
November	101.0	92.5	81.1	69.4	74.8	79.8	
December	101.4	92.5	81.2	70.0	75.4	79.7	
Average	100.0	93.4	83.2	67.4	67.9	77.2	

Taking 458,732 as the average monthly number of men employed in the industry in 1929 and equivalent to the index number 100, then the peak month is that year, February, showed 494,054 employed, while the low month, July, showed 431,667 men as employed. The number of men displaced amounted to 62,387. It will be noted that the Bureau of Labor Statistics figure differs from that of the Census of Mines and Quarries, largely because of the adjustments made by the former agency.

Perhaps a better indicator of seasonal employment or irregular operation than any discussed above is the data showing the approximate average hours worked per week by bituminous coal mines in each of the principal states. These data are more suited for showing seasonality because they represent the fluctuations in working time per week from month to month reflecting changes in consumer demand. Variations in employment tend to lag behind changes in demand, but variations in working time reflect the ups and downs in consumer purchasing quite accurately. The average working time per week in the principal states during the months of 1931 is shown in the table below. The year 1931 was selected as the last available year which was relatively free from industrial disputes.

TABLE X

APPROXIMATE AVERAGE HOURS WORKED PER WEEK BY BITUMINOUS COAL MINES IN EACH OF THE PRINCIPAL STATES, 1931

(The average hours worked per week represent mine operating time and are calculated as follows. Each mine reports to the Bureau of Mines the number of hours in its working day and the number of days it operated per year. From this is readily calculated the number of hours operated per year. In this table the known total for the year has been apportioned by months on the assumption that the working time in any month will be proportional to the production of that month. (In averaging the working time, the mines are weighted by their size as indicated by the number of men employed.) The result, though not precise, should approximate closely the average number of hours worked per week in each month of the year by the mines in operation in that year.)

Region and State	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
NORTH													
Ohio	26.8	30.2	28.3	27.9	22.8	23.4	25.3	27.7	27.1	28.2	28.3	27.3	25.2
Pennsylvania	26.1	30.7	30.2	28.0	25.6	25.5	24.9	25.6	24.0	24.9	25.8	25.7	22.4
Maryland	29.2	38.6	33.7	32.3	28.3	24.3	23.8	25.6	24.7	27.0	30.5	32.3	31.0
West Va. (Northern)	27.0	31.9	31.2	29.0	26.7	24.7	27.0	24.1	23.4	25.0	28.6	28.3	23.7
APPALACHIANS													
West Va. (Southern)	27.4	28.5	25.8	25.5	23.8	25.3	27.4	29.4	29.3	31.8	32.7	27.7	22.2
Eastern Kentucky	26.3	29.5	25.7	26.4	22.7	24.6	26.5	27.4	28.2	29.1	28.7	25.4	21.1
Virginia	27.1	31.0	26.4	27.6	24.6	26.8	25.8	25.4	27.6	28.7	28.6	28.1	24.1
Tennessee	26.8	34.6	31.0	31.3	26.5	22.8	21.8	23.5	26.6	27.5	26.6	25.6	22.8
ALABAMA	23.2	29.0	26.5	26.2	24.1	24.4	22.8	21.1	21.2	21.7	20.2	21.7	19.5
MIDDLE WEST													
Michigan	14.8	28.4	28.4	27.1	4.9	2.5	3.7	3.7	3.7	7.4	27.1	17.3	19.7
Indiana	22.5	30.0	25.8	27.8	19.9	20.1	18.9	17.4	18.6	20.8	23.3	23.0	24.6
Illinois	20.9	28.1	23.8	24.8	17.6	17.4	15.8	16.0	19.0	19.9	22.5	22.3	23.6
Western Kentucky	20.1	26.9	22.4	23.1	16.9	16.0	14.9	14.5	18.2	20.8	22.6	21.9	23.1
Iowa	21.8	29.3	24.2	27.3	18.2	17.2	17.6	15.5	15.9	19.8	24.8	24.8	27.2
SOUTHWEST-INTERSTATE													
Missouri	22.1	24.9	19.7	22.1	18.7	16.1	14.6	20.0	19.3	21.2	26.4	31.8	30.3
Kansas	18.9	27.0	19.5	20.6	15.4	14.2	13.1	15.4	14.8	19.2	19.5	21.2	25.3
Oklahoma	17.8	26.1	14.1	15.5	10.9	9.5	12.9	14.6	19.2	22.4	26.4	21.0	20.7
Arkansas	14.6	21.1	9.2	9.2	6.9	5.0	6.5	8.8	13.8	21.5	32.7	21.1	16.9
Texas	23.2	23.2	22.2	22.2	20.2	20.2	20.2	23.2	29.3	28.2	28.2	24.2	21.2
NORTH DAKOTA	27.1	34.1	26.6	26.0	17.9	16.3	16.3	16.8	20.1	29.3	36.3	* 42.3	40.7
ROCKY MOUNTAIN													
Montana	23.7	29.9	24.6	23.1	18.5	16.9	17.2	16.0	19.1	24.9	27.1	34.5	34.5
Wyoming	23.7	26.9	23.3	23.6	22.4	20.9	16.9	16.1	20.5	26.9	28.8	30.7	27.0
Colorado	21.8	32.3	22.4	24.6	15.9	16.1	12.0	11.2	17.0	24.5	27.0	27.6	30.9
New Mexico	22.3	28.4	22.7	23.2	21.4	21.4	20.6	17.5	17.1	19.7	21.9	24.9	26.7
Utah	21.5	36.3	20.1	18.5	14.2	12.4	9.3	8.5	13.2	26.6	25.6	35.3	38.8
WASHINGTON	26.2	31.0	27.9	25.8	23.6	19.2	20.5	19.2	21.0	24.9	30.1	38.0	34.9
U. S. total (including "other States")	24.9	29.7	26.6	26.4	22.3	22.6	22.7	23.2	23.8	25.5	26.8	25.8	23.6

* Much of the output of this State is produced by mines that operate 9 or 10 hours per week.

F. G. Tryon,
Bureau of Mines
August 8, 1933.

It will be noted that considerable difference is found as to peak and low months for the various states. In general, however, it may be said that the peak months for working time are October, November, December and January (especially January) with an easing off as the new coal year, beginning in April, approaches. The low months are April, May, June and July. The eastern states in general have their lowest working time in April, May and June, while the far western states consistently show July as the month of least working time per week. Seasonality, it must be noted, may be somewhat accentuated in 1931 since industrial purchasing was at a low ebb and thus domestic consumption assumed a larger proportion tending to emphasize seasonal demand.

(See table entitled "Approximate Average Hours Worked Per Week by Bituminous Coal Mines in Each of the Principal States, 1931."

If the average hours worked per week during the year be takn as a norm, it will be noted that deviations from this norm for peak and low months differ widely in degree for the various states. These deviations may be taken as an indication of the extent to which seasonality affects working time and thus employment in the principal states.

TABLE XI

ABSOLUTE AND PERCENTAGE DEVIATIONS FROM THE AVERAGE HOURS WORKED PER WEEK DURING YEAR FOR PEAK MONTHS AND LOW MONTHS IN PRINCIPAL STATES, 1931.

State	Average Hours Worked Per Week: Year	Peak Month: Absolute Increase	Peak Month: Percentage Increase	Low Month: Absolute Decrease	Low Month: Percentage Decrease
North					
Ohio	26.8	3.4	12.7	4.0	14.9
Pennsylvania	26.1	4.6	17.6	3.7	14.2
Maryland	29.2	9.4	32.2	5.4	18.5
West Va. (No.)	27.0	4.9	18.2	3.6	13.3
Appalachian					
West Va. (So.)	27.4	5.3	19.3	5.2	19.0
Eastern Ky.	26.3	3.2	12.2	5.2	19.8
Virginia	27.1	3.9	14.4	3.0	11.1
Tennessee	26.8	7.8	29.1	5.0	18.7
Alabama	23.2	5.8	25.0	3.7	15.9
Middle West					
Michigan	14.8	13.6	91.9	12.3	83.1
Indiana	22.5	7.5	33.3	5.1	22.7
Illinois	20.9	7.2	34.3	5.1	24.4
Western Ky.	20.1	6.8	33.8	5.6	27.9
Iowa	21.8	7.5	34.4	6.3	28.9

TABLE XI (Cont'd)

State	Year	Average Hours Worked Per Week			
		Peak Month		Low Month	
		Absolute Increase	Percentage Increase	Absolute Decrease	Percentage Decrease
Southwest Interstate					
Missouri	22.1	9.7	43.9	7.5	33.9
Kansas	18.9	8.1	42.9	5.8	30.7
Oklahoma	17.8	8.6	48.3	8.3	46.6
Arkansas	14.6	18.1	55.5	9.6	65.8
Texas	23.2	5.0	21.6	3.0	12.9
North Dakota	27.1	15.2	56.1	10.8	39.9
Rocky Mountain					
Montana	23.7	10.8	45.6	7.7	32.5
Wyoming	23.7	7.0	29.5	7.6	32.1
Colorado	21.8	10.5	48.2	10.6	48.6
New Mexico	22.3	6.1	27.4	5.2	23.3
Utah	21.5	17.3	80.5	13.0	60.5
Washington	26.2	11.8	45.0	7.0	26.7
U. S. Total (Other States Included)	24.9	4.8	19.3	2.6	10.4

It will be noted, for example, that Michigan shows an increase of 13.6 hours per week or 91.9 per cent in the peak month as against the average for the year. The low month shows a decline of 12.3 hours or 83.1 per cent. This wide fluctuation arises out of the fact that much of the Michigan production enters th domestic market. Fluctuations of this charact r occur throughout the middle West. In the case of the Southwest and Rocky Mountain areas, the explanation lies not only in producting for domestic markets but also because the type of the coal produced does not lend itself to storage. Variations in the eastern coal producing states are not so pronounced because in addition to supplying domestic needs, the coals enter into the industrial markets. Industrial coal, bought on contract, makes possible more regularized production.

In summarizing this section, it may be stated that the production of bituminous coal, when not affected by such disturbing factors as strikes or acute shortage of transportation, has responded quickly to sharp changes in the state of trade. When such disturbing elements enter into the picture, the bituminous coal industry might experience an artificial prosperity after other industries were undergoing retrenchment, simplye because consumer stocks were depleted and required replenishment.

4. MOVEMENT FOR SHORTENING THE WORK DAY AND WEEK

Interest in the subject of reduction of hours of work in bituminous coal mining may be said to have begun in the last decade of the nineteenth century. The national convention of the United Mine Workers held at Pittsburgh on April 6, 1891, gave serious consideration to the question of establishing a basic eight-hour day in the central competitive field. (*) Many of the delegates at the convention declared themselves in favor of the eight-hour day. The eight hour question was then openly brought forward before the joint wage conference of Ohio and Western Pennsylvania operators and miners (April 7, 1891). The United Mine Workers requested that the shorter working day be discussed because the miners looked upon that question as paramount to all other issues and would refuse to take up anything else until that matter was settled. (**) The statement was made that the American Federation of Labor had selected the carpenters to make the first fight for an eight-hour day and that it had been successfully established in their craft. The miners were next designated to undertake the movement, but at the date set the miners were not in condition to ask for eight hours because they were under contract with the operators and felt obligated to respect their agreements. The American Federation of Labor convention held at Detroit, Michigan, (December 1890) re-affirmed the conclusion that the miners demand an eight-hour day. The joint conference of operators and miners reached an impasse over the eight-hour day question and adjourned sine die.

An official circular was issued on April 17, 1891 by the United Mine Workers regarding the question of the eight-hour work day. (***) An excerpt from this circular indicates the stand taken by the mine workers' organization.

> "The failure of the miners and operators of Ohio and Pennsylvania to agree make possible a national movement for the establishment of the eight-hour day. While the organization is opposed to strike unless as a last resort, at the present time we see no way to avoid the conflict. In calling on you, the miners and mine laborers of the country, to lay down your picks and demand an eight-hour working day on May 1, we but carry out your instructions."

(*) Evans, Chris, History of the United Mine Workers of America, Vol. II, pages 96-101.

(**) Ibid, supra, page 106

(***) Ibid, supra, pages 114-117

A meeting of the National Executive Board and District Presidents of the United Mine Workers of America (April 25 and 27, 1891) decided to defer the eight-hour movement. The reasons for this postponement were that in several parts of the country independent action had been taken. For example, the West Virginia miners were not prepared to partake in the movement and had so decided in their convention. New Straitsville, Ohio, miners made an agreement with their employers to continue working for another year at the then existing prices and hours. These factors plus the number of unorganized miners and the inadequacy of funds in the treasury resulted in rescinding the strike order and in the failure of the first general eight-hour movement. (*) The Interstate Joint Conference became a discredited institution. The ensuing period, 1891-1897, was very critical for the United Mine Workers, being accentuated by the general industrial depression. Efforts to re-establish interstate joint conferences failed and district bargaining became the rule.

The miners' convention of 1897, decided to call a general suspension of work commencing July 4th in order to enforce the scale adopted at the convention. The organization then had some 10,000 members, but the union president said that about 150,000 men ceased work. (**) The suspension lasted from July 4th until September 11th when it was called off by the national convention. The interstate joint conference agreement of 1898 resulted from this strike. One of the clauses in the agreement provided:

> "That on and after April 1, 1898, the eight-hour work day with eight hours' pay, consisting of six days per week, shall be in effect in all the districts represented and that uniform wages for day labor shall be paid the different classes of labor in the fields named, and that internal differences in any of the states or districts, both as to prices or conditions shall be referred to the states or districts affected for adjustment." (***)

(*) Ibid, supra, pages 122-126-Cf. also Suffern, Arthur E., The Coal Miners' Struggle for Industrial Status, page 64.

(**) Lubin, Isador, Miners' Wages and the Cost of Coal, page 55. Evans' History of the United Mine Workers (page 512) estimated that there were 111,000 mine workers in the competitive fields of western Pennsylvania, Ohio, Indiana, Illinois, and West Virginia

(***) Section 5, Chicago Agreement (January 28, 1898)

This agreement applied to the operators and miners of Illinois, Indiana, Ohio, and western Pennsylvania.

Progress toward a universal eight-hour day in the bituminous coal mines was accelerated during the War period. The data regarding length of the working day as shown by the Bureau of Mines refer to the number of hours that mines are supposed to be in operation, cars and orders permitting, and not to the number of hours actually worked by the men.(*) These data showed that the percentage of the number of men working in mines at which the standard day was eight hours increased from an average of about 60 per cent in the period from 1910 to 1916 to 79 per cent in 1917. (**) The percentage of men working nine hours, on the other hand, decreased from 15.5 per cent in 1914 and 17.5 per cent in 1916 to 12.5 per cent in 1917, while the percentage of men working ten hours decreased from 25 per cent in the period 1910 to 1916 to 8.5 per cent in 1917. This general change was largely the result of reduced working hours in Kentucky, Maryland, Pennsylvania (bituminous), Tennessee, Virginia, and West Virginia, more particularly in the larger non-union fields. The movement toward the shorter hour work day was still more evident in the following year, 1918. The percentage of men employed in mines where the established working day was eight hours increased from 79 in 1917 to 91 in 1918. (***) By 1920 this percentage had reached 97.1. The years 1921 and 1922, however, showed some retrogression, although the 10-hour day had practically disappeared from coal mines in the United States and the nine-hour day prevailed at only a small proportion of the mines. (****) The reduction in the percentage of men working at eight-hour mines was not due to a decrease in the number of these mines nor of men employed there. The percentage change resulted from the increased number of nine and ten hour mines, the only real reverse suffered by the eight-hour day movement was in Alabama.

The following table, which shows the length of the working day at the mines from 1903 to 1932, does not show the number of hours the men actually worked. The cutting, shooting, and loading of coal is generally paid for at fixed rates per ton, and the men doing this kind of work are known as contract men or tonnage men. These men are piece-workers and are not obliged to put in a certain number of hours at their working places. The figures, therefore, really indicate the number of hours the men had an opportunity to work during a full day on the assumption that there was a full run of cars and that the market conditions were favorable to full-time operation; they do not mean that all the tonnage men worked the number of hours stated. Other employees engaged in maintenance, haulage, and repair work are paid by the day and their hours conform more closely to the established working day

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(*) Coal in 1922, page 501

(**) Coal in 1917, page 934

(***) Coal in 1918, page 721

(****) Coal in 1922, page 501

of the mine. In some occupations the day men work longer hours than the mine. The Bureau of Labor Statistics study of hours and wages in bituminous coal mining made during the first quarter of 1933 was based on reports made for 444 mines. (*) This study showed that the vast majority of the time workers at these mines began work at 6:30, 7:00, or 7:30 A.M., worked 4½ or 5 hours in the morning, took 30 minutes for lunch, worked 3½ or 3 hours in the afternoon, and quit work at or near 3:30 P.M. The regular or basic hours of work for these employees were, therefore, eight per day and forty-eight per week, exclusive of lunch time. Some of the pumpmen, engineers, motormen, brakemen, drivers, and cagers, and a few wage earners in some of the other occupations, worked at time, or whenever necessary, more than eight hours per day, and in several occupations some worked on Sunday. Time worked in excess of eight hours per day and work on Sunday was paid for at the regular rate.

The hours of tonnage workers are usually presumed to be approximately the same as those of time workers, but in actual practice their hours are usually more or less irregular. Some tonnage workers enter the mines as early as 6:00 or 6:30 A.M., begin work immediately upon arrival at the face, and work throughout the day, eating their lunch while waiting for mine cars or material; some quit for the day at or near noon; and still others enter the mines around or after 7:00 A.M., take as much time for lunch as they desire, and often quit before the mine as a whole ceases operation. The U.S. Bureau of Mines reported a total of 406,380 bituminous coal-mining wage earners in 5,427 mines in 1932; of this number 365,962 in 4,436 mines were reported as having the regular or basic eight-hour day. The data in the following table show the percentage of the total number of bituminous coal-mining wage earners employed at mines operating a specified number of hours per day, during the period 1903 to 1932. These figures will indicate that the general trend has been to the eight-hour day. The eight-hour day mines employed 56.4 percent of the total number of wage earners in bituminous coal mining in 1903. This percentage increased to 64 in 1907; decreased to 58.6 in 1916; increased each year to 97.1 in 1920, the highest for any year from 1903 to 1932; decreased from year to year to 93.5 in 1925; increased to 93.7 in 1926; decreased year by year to 92.4 in 1930; increased to 93 in 1931; and then declined to 91.9 in 1932.

Wage earners in the nine-hour day mines declined from 17.1 percent of the total in all mines in 1903 to 6.2 percent in 1932. In the ten-hour day mines, the percentage of wage earners declined from 26.5 in 1903 to 1.9 in 1932. Taking the weighted average hours per day for all bituminous wage earners, there was a decrease from 8.7 in 1903 to 8.10 in 1932.

(See Table on page 8)

(*) Bureau of Labor Statistics, Wages and Hours of Labor in Bituminous Coal Mining: 1933, page 15

Table I

PERCENT OF MEN EMPLOYED IN BITUMINOUS COAL MINES WHO HAD AN ESTABLISHED WORKING DAY OF 8, 9 OR 10 HOURS, 1903 to 1932 1/

Source: U. S. Bureau of Mines

Year	Percent of Total Employees in Mines Working			Weighted Average Working Day (hours)
	8 Hour Day	9 Hour Day	10 Hour Day	
1903	56.4	17.1	26.5	8.7
1904	62.1	13.8	24.1	8.6
1905	61.1	13.6	25.3	8.6
1906	63.0	13.5	23.5	8.6
1907	64.0	11.6	24.4	8.6
1908	67.5	11.1	25.4	8.6
1910	62.1	11.3	26.6	8.6
1911	62.9	10.9	26.2	8.6
1912	61.6	11.5	26.9	8.6
1913	61.9	15.2	22.9	8.6
1914	60.7	15.4	23.9	8.6
1915	59.6	17.0	23.4	8.6
1916	58.6	17.4	24.0	8.6
1917	79.0	12.6	8.4	8.3
1918	90.6	6.7	2.7	8.12
1919	95.5	3.5	1.0	8.06
1920	97.1	2.0	.9	8.04
1921	96.6	2.9	.5	8.04
1922	95.1	4.0	.9	8.06
1923	94.7	4.3	1.1	8.06
1924	93.7	5.1	1.2	8.08
1925	93.5	5.4	1.1	8.08
1926	93.7	5.5	.8	8.07
1927	93.4	5.6	1.0	8.08
1928	93.1	6.1	.8	8.08
1929	93.5	5.7	.8	8.08
1930	92.4	6.6	1.0	8.09
1931	93.0	6.1	.9	8.08
1932	91.9	6.2	1.9	8.10

1/ Percentages are calculated on basis of total men in mines definitely reported as having worked an 8, 9 or 10-hour day. A small number of mines that work more than 10 hours or less than 8 hours have been excluded, as have also all mines for which the reports were defective or in which the working day was changed during the year.

The advent of the N.I.R.A. and the adoption of a Code of Fair Competition for the Bituminous Coal Industry gave still further impetus to the shortening of the work day and week. Article III of the Bituminous Coal Code (effective October 2, 1933) provided that:

> "No employee, except members of the executive, supervisory, and confidential personnel, shall be employed in excess of 40 hours in any calendar week after the effective date of this Code. No employee shall be required or permitted to work more than eight hours in any one day at the usual working places or otherwise in or about the mine (exclusive of lunch period), whether paid by the hour or on a tonnage basis or other piecework basis.
>
> "There shall be excepted from the foregoing limitations (a) employees required because of accidents which temporarily necessitate longer hours for them; (b) supervisors, clerks, technicians and that small number of employees at each mine whose daily work includes the handling of man-trips and/or haulage animals and coal in transit and those who are required to remain on duty while men are entering or leaving the mine.
>
> "The foregoing maximum hours shall not be construed as a minimum; and if at any mine a majority of the employed workers express their desire, by written request to the employer, to share available work with bona fide unemployed workers of the same mine, the number of hours' work may be adjusted accordingly by mutual agreement between such employed workers and their employers."

The effect of the Code upon the length of the working day in 1933 as reported by mines to the U. S. Bureau of Mines is clearly indicated in the following inset.

Table II

Percentage of Men Employed in Bituminous Coal Mines that had Established Working Days of 8, 9, or 10 Hours in 1933

(U. S. Bureau of Mines)

Year	Per cent of total employees in mines working 8 hours	9 hours	10 hours	Weighted Average working day (hours)
Before Oct. 2	92.6	4.9	2.5	8.10
After Oct. 2	99.8	.1	.1	8.00
Avg. for year 1/	94.4	3.7	1.9	8.07

1/ In computing the average, the reported data for "before Oct. 2" have been weighted by nine months and the data for "after Oct. 2" by three months.

Added to the foregoing provisions dealing with maximum hours of employment in the Bituminous Coal Code, Article V, Section (g) authorized that as soon as possible after the adoption of the Code an investigation be made as to the practicability and cost (assuming the maintenance of existing rates of pay) of applying to bituminous coal mining a shorter work day and work week. A conference between representatives of employers and employees was to be held on January 5, 1934 to consider this question as well as others dealing with wages and differentials.

In addition to the eight-hour day movement which has just been discussed, there had been initiated another effort to reduce the work day and week. This effort began in the United Mine Worker convention of September 22, 1919 when certain discontented district officials succeeded in having the convention adopt a number of demands which the operators were required to meet or otherwise face a general strike on November 1, 1919. Among these demands was the six-hour day and five-day week. Organized mine labor has continued its interest in a basic thirty-hour work week since that date. In recent years the thirty-hour week movement has received a decided impetus from the legislative efforts of the American Federation of Labor. One of the issues brought forward by the United Mine Workers upon the expiration of the Appalachian Agreement (March 31, 1935) was the thirty-hour week.

Although the mine workers have not yet attained their objective for the thirty-hour week, a step in that direction was made when the Bituminous Coal Code was amended (No. 1) on March 31, 1934. This amendment provided that the maximum hours of employment per day should be seven and that the work week should consist of five days, thus establishing a basic 35-hour week. The details of the hours provisions during the Code period and the economic effects upon cost of production will be discussed in a later section.

The foregoing paragraphs represent a general summary of the movement for the shortening of the work day and week. In considering this subject, attention should be given to the differences in the basic working day in union, non-union and irregular fields. It is undoubtedly true that the unionized coal producing areas exerted a constant pressure upon competing unorganized fields to reduce the length of the working day. The following

table represents a calculation of the differences in the basic working day in the various coal fields. The figures indicate the number of hours that a majority of the men were given an opportunity to labor when the mine operated a standard day. (*) The fractions that appear under the union designation are contributed by the figures compiled for the union areas of West Virginia. It is quite likely that even in these West Virginia areas, the union mines were operating on an eight-hour basis. In contrast with the eight-hour day in the union mines, the non-union mines averaged about eight and three quarter hours and the irregular fields eight and a half hours.

Table III

The Basic Working Day in Union, Non-union, and Irregular Bituminous Coal Fields, (a) 1912 to 1922 (b)

	Average Standard Hours				Relative Standard Hours (base 1920)			
	All fields	Union	Non-union	Irregular	All fields	Union	Non-union	Irregular
1912	8.66	8.04	9.61	9.38	107.8	100.5	119.9	116.5
1913	8.60	8.05	9.50	9.02	107.1	100.6	117.6	113.0
1914	8.62	8.06	9.55	9.00	107.3	100.8	118.2	111.8
1915	8.61	8.06	9.51	8.95	107.2	100.8	117.7	111.2
1916	8.64	8.06	9.54	8.94	107.6	100.8	118.1	111.1
1917	8.31	8.03	8.78	8.44	103.5	100.3	108.7	104.8
1918	8.13	8.02	8.27	8.37	101.2	100.3	102.4	103.7
1919	8.05	8.01	8.11	8.11	100.2	100.1	100.4	100.7
1920	8.03	8.00	8.08	8.05	100.0	100.0	100.0	100.0
1921	8.03	8.00	8.09	8.03	100.0	100.0	100.1	99.8
1922	8.06	8.00	8.15	8.09	100.4	100.0	100.9	100.5

(a) Fisher and Bezanson, Ibid, supra. Based on statistics compiled by the Coal and Coke Division of the Geological Survey.

(b) The weighted average for the elven-year period is as follows: Union, 8.03; non-union, 8.53; all fields, 8.32

These figures for a standard day are based upon certain assumptions. In the union fields a standard eight-hour day was in effect during the entire period shown. The irregular fields, however, were changing back and forth and in some cases the union signed an agreement permitting a longer day than eight hours. (**) Many mines in the non-union areas worked ten hours or more, but the length of the working day tended to decrease during the years 1917 to 1920. Since the non-union and irregular areas lacked uniformity in the time worked per day, the normal length of the working time had to be computed.

(*) Fisher, Waldo E. and Bezanson, Anne, Wage Rates and Working Time in the Bituminous Coal Industry 1912-1922, pages 150 and 151.

(**) Ibid, supra, pages 223-224.

The computation was based upon the data of the Geological Survey and the established hours were weighted by the number of men employed. Unspecified mines (all others), which included mines changing their hours during the year, as well as those which failed to report, were assumed to have the same distribution as was found in those with specified hours. These figures, then, indicate the length of the working day which the mine was scheduled to work and not the number of hours that the men worked.

The United States Bureau of Labor Statistics has carried on periodic surveys regarding the wages and hours of labor in bituminous coal mining. These surveys cover a varying number of mines in eleven states (*) and differ as to the period of the year when they are conducted. The data collected are heavily weighted by captive operations which emphasize industrial changes.

The number of wage earners covered by the Bureau in the study of the industry in 1933 was 120,354 or 30.3 per cent of the total number of mine workers reported by the United States Bureau of Mines as employed in bituminous coal mining in the United States in 1932 and 33.6 per cent of the total number employed in the eleven states represented in the study. The 444 reporting mines accounted for 34.5 per cent of the total production of all mines in all states in 1932 and 37.7 per cent of the total tonnage produced by all mines in the eleven states.

The hours of employment data in this study show (1) time at the face, including time for lunch, and (2) total time in the mine, including time for lunch and travel time inside the mine from its opening to the "face" or working place in the mine and return.

"Time for lunch" was usually about 30 minutes, except in some mechanized mines where it was estimated that the men consumed 15 to 20 minutes for lunch while waiting for mine cars. The longest time reported for lunch was one hour. The weighted average lunch time taken by the 74,896 miners and loaders in the 444 mines covered in the 1933 study was 30.6 minutes per day.

The round-trip travel time in the different mines ranged from 10 minutes to two hours. The weighted average time of travel in the mine, from the opening to the place of work and return, for the 74,896 miners and loaders in the 444 mines was 54 minutes per day or 27 minutes each way.

The three basic occupations in bituminous coal mining are those of hand or pick miners, machine miners (cutters), and hand loaders. These occupations represented 67.3 per cent of all the wage earners covered by the Bureau of Labor Statistics' study. These wage earners are usually paid a rate per ton of 2,000 pounds, run of mine coal and are not, therefore, time workers.

Since miners and loaders are usually paid at tonnage instead of time rates, very few companies keep a daily record for such employees. The hours worked by the miners and loaders were ascertained, therefore, by arrangements with mine officials to keep a special day-by-day record of all hours of

(*) Alabama, Colorado, Illinois, Indiana, Kansas, Kentucky, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia.

each employee for a sample pay period. The hours worked by time workers, on the other hand, are of regular record.

The following table indicates the hours of employment for miners and loaders from 1922 to 1933. These hours data apply to the wage earners themselves and so differ from the data shown earlier in this section - the latter data being for hours worked by mines.

Table IV

Average Hours of Employment of Miners and Loaders, 1922, 1924, 1926, 1929, 1931, and 1933

(U. S. Bureau of Labor Statistics)

Year	Number of mines	Number of wage earners	Average Hours: In half month based on - Time at face including lunch	Average Hours: In half month based on - Time in mine	Average Hours: Per start (day) based on - Time at face incl. lunch	Average Hours: Per start (day) based on - Time in mine
1922 1/	200	33,360	68.1	73.7	7.7	8.3
1924	599	91,167	64.6	70.0	7.8	8.5
1926	556	96,010	75.4	82.2	7.9	8.6
1929	535	99,405	72.6	79.6	8.0	8.8
1931	469	90,063	56.5	61.9	8.0	8.8
1933	444	78,896	57.2	63.2	8.0	8.9

1/ Includes data for Utah, Washington, and Wyoming.

Data as to hours of work for time workers are shown in the following table. It will be noted that wage earners in this group work more average actual hours than do the tonnage men.

Table V

Average Hours of Employment of All Wage Earners other than Miners and Loaders, 1922, 1924 1926, 1929, 1931, and 1933

(U. S. Bureau of Labor Statistics)

Year	Number of Mines	Number of wage earners	Average actual hours: Worked in half month	Average actual hours: Per start (day)
1922 1/	200	19,388	87.8	8.7 2/
1924	599	49,552	83.1	8.5
1926	556	52,145	91.7	8.6
1929	535	52,806	87.0	8.6
1931	469	47,725	69.8	8.4
1933	444	41,438	67.1	8.4

1/ Includes data for Utah, Washington, and Wyoming.
2/ Not including data for 777 wage earners whose starts were not reported.

The above tables may be somewhat misleading in that they tend to indicate a uniformity in working hours which does not exist. The following tables which show average hours per day (start) for different occupations in 11 coal producing states indicate quite clearly that the eight-hour day was commonly exceeded in most of the occupations and in some instances for particular localities approached 10 and even 11 hours per day. Working time in excess of eight hours was more prevalent in the coal producing areas south of the Ohio River, especially in West Virginia, Virginia, Tennessee, and Alabama. The Bureau of Labor Statistics' data cannot be taken as an accurate determination of the average working time for employees in a given state or field, but they do serve as an indication of the lack of uniformity and the extent to which certain areas had progressed toward a standard eight-hour day.

The standard working day, prior to the Bituminous Coal Code amendment, was eight hours. The mines worked six days a week when market and other conditions permitted so that the established working week was 48 hours. There are no available data to indicate how many mines attained the maximum working week for a whole or a part of the year. Monthly production data, however, as well as the record of average number of days worked during the year indicate that the 8-hour day and 48-hour week was not generally achieved in the industry. Indeed, a relatively small number of mines are able to carry on full-time, year-round activity. Mining operations whose production is based upon long time contracts with public utility and industrial users having non-fluctuating needs or captive mines are the most likely to attain the objective of full-time, year-round activity. Likewise, during years of general industrial prosperity commercial mines supplying industrial needs attain greater continuity of operation. On the other hand, mines producing primarily for domestic consumption or whose coals contain a high moisture content or are subject to much degradation, operate excessive hours during periods of peak demand and are almost totally shut down during the slack season.

An estimate of the average weekly operating time of mines for 1929, 1930, 1931, 1932 and 1933 prior to Oct. 2 by individual states is shown in the following table. The figures shown represent the average working time for all mines which operated at any time during the year and are weighted by the total number of men employed during the year regardless of the number of days worked or the months in which the men were employed. The data represent, therefore, the average for all mines in operation at any time during the year, but do not reflect the average time for mines in actual operation during a given month nor do they make allowances for monthly variations in the number of men employed.

It should be noted that these data for states tends to conceal the difference in operating time among various mines within the state. This situation is illustrated clearly in comparing the average hours worked per week during a given year for bituminous coal production in all the states as against the average hours worked per week during the same year for any particular state. For example, in 1929 the industry averaged 34.0 hours per week, but Alabama, Kentucky, Maryland, Virginia, and West Virginia showed a range from 37.3 hours to 39.3 hours, while average hours in Arkansas, Illinoi Indiana, and Kansas ranged from 22.6 to 27.2. In any case, even the boom year of 1929 found no state showing more than 39.3 average hours worked per week as against the standard 48-hour week. The effect of changing business conditions and consumer demands has already been discussed in the preceding section of this study.

Table VI

AVERAGE HOURS OF EMPLOYEES "OTHER THAN MINERS AND LOADERS", 1931 AND 1933 BY PLACE OF WORK, OCCUPATION AND STATE OR SUBDIVISION 1/

(Average Actual Hours Excluding Time for Lunch)

State or Subdivision	Inside Work: Brakemen		Inside Work: Laborers		Inside Work: Motormen		Inside Work: Trackmen		Outside Work: Laborers	
	1931	1933	1931	1933	1931	1933	1931	1933	1931	1933
Alabama	8.5	9.0	8.4	8.7	8.5	9.1	8.3	8.9	8.6	8.9
Colorado	8.2	8.0	8.1	8.0	8.1	8.1	8.1	8.1	8.7	8.6
Illinois	8.3	8.3	8.0	8.0	8.4	8.5	8.0	8.0	8.2	8.2
Indiana	7.8	7.9	7.8	8.0	7.9	8.1	7.7	7.8	8.0	8.1
Kansas	8.0	8.1	8.2	8.0	8.0	8.2	8.1	7.9	8.1	8.3
Kentucky	8.5	8.6	8.2	8.2	8.6	8.7	8.2	8.0	8.7	8.8
Eastern		8.7		8.1		8.7		8.1		9.0
Western		8.3		8.4		8.4		7.9		8.3
Ohio	8.1	8.1	8.1	8.0	8.3	8.2	8.0	8.0	8.2	8.1
Pennsylvania	8.7	8.4	8.1	7.8	8.7	8.4	8.2	7.9	8.8	8.6
Central		8.8		8.3		8.8		8.1		9.0
Western		8.0		7.5		8.0		7.7		8.2
Tennessee	8.1	8.4	7.9	8.2	8.1	8.5	8.0	8.1	8.3	8.1
Virginia	8.8	9.0	8.4	8.5	9.0	9.1	8.3	8.3	9.0	9.0
West Virginia	8.6	8.4	8.3	8.3	8.7	8.5	8.3	8.2	8.9	8.6
Northern		8.0		7.6		8.1		7.8		7.6
Southern		8.5		8.4		8.6		8.2		8.8
Average	8.5	8.4	8.2	8.1	8.6	8.5	8.2	8.0	8.7	8.5

1/ Wages and Hours of Labor in Bituminous Coal Mining: 1933 - Bureau of Labor Statistics.

TABLE VII

APPROXIMATE AVERAGE HOURS WORKED PER WEEK BY BITUMINOUS COAL MINES IN EACH OF THE PRINCIPAL STATES, 1929–~~1931~~ 1933

(Computed from annual reports of operators to the U. S. Bureau of Mines)

State	1929				1930				1931				1932				1933 (Prior to Oct 1)			
	Days worked in 1929	Weighted average hours in established working day	Hours worked per year in 1929	Average hours worked per week in 1929	Days worked in 1930	Weighted average hours in established working day	Hours worked per year in 1930	Average hours worked per week in 1930	Days worked in 1931	Weighted average hours in established working day	Hours worked per year in 1931	Average hours worked per week in 1931	DAYS WORKED IN 1932	WEIGHTED AVERAGE HOURS IN ESTABLISHED WORKING DAY	HOURS WORKED PER YEAR IN 1932	AVERAGE HOURS WORKED PER WEEK IN 1932	DAYS WORKED IN 1933	WEIGHTED AVERAGE HOURS IN ESTABLISHED WORKING DAY	HOURS WORKED PER YEAR IN 1933	AVERAGE HOURS WORKED PER WEEK IN 1933
Alabama	231	8.84	2,042	39.3	189	9.01	1,703	32.8	136	8.88	1,208	23.2	107	9.01	964	18.5	148	9.13	1,351	26.0
Arkansas	146	8.06	1,177	22.6	115	8.02	922	17.7	95	8.00	760	14.6	92	8.02	738	14.2	94	8.02	754	14.5
Colorado	187	8.05	1,505	28.9	169	8.00	1,352	26.0	142	8.00	1,136	21.8	142	8.00	1136	21.9	148	8.00	1,184	22.8
Illinois	177	8.00	1,416	27.2	156	8.00	1,248	24.0	136	8.00	1,088	20.9	112	8.00	896	17.2	141	8.00	1,128	21.7
Indiana	172	8.00	1,376	26.5	157	8.00	1,256	24.2	146	8.00	1,168	22.5	145	8.00	1160	22.3	163	8.00	1,304	25.1
Iowa	195	8.00	1,560	30.0	155	8.00	1,240	23.9	142	8.00	1,136	21.8	151	8.05	1216	23.4	138	8.05	1,111	21.4
Kansas	160	8.02	1,283	24.7	126	8.01	1,009	19.4	123	8.01	985	18.9	130	8.02	1,043	20.1	140	8.02	1,123	21.6
Kentucky, total	222	8.11	1,800	34.6	187	8.11	1,517	29.2	159	8.11	1,289	24.8	155	8.15	1263	24.3	170	8.16	1,387	26.7
Eastern	239	8.11	1,938	37.3	200	8.11	1,622	31.2	168	8.13	1,366	26.3	156	8.20	1279	24.6	179	8.21	1,470	28.3
Western	177		1,435	27.6	148		1,200	23.1	130	8.02	1,043	20.1	149	8.01	1193	23.0	137	8.00	1,096	21.1
Maryland	246	8.01	1,970	37.9	197	8.00	1,576	30.3	190	8.00	1,520	29.2	150	8.00	1200	23.1	172	8.00	1 376	26.5
Michigan	217	8.00	1,736	33.4	187	8.00	1,496	28.8	96	8.00	768	14.8	159	8.00	1272	24.5	130	8.00	1,040	20.0
Missouri	185	8.03	1,486	28.6	166	8.02	1,331	25.6	142	8.09	1,149	22.1	161	8.09	1302	25.1	150	8.06	1,209	23.3
Montana	189	8.14	1,538	29.6	172	8.14	1,400	26.9	153	8.06	1,233	23.7	145	8.05	1167	22.5	166	8.03	1,333	25.6
New Mexico	214	8.00	1,712	32.9	176	8.00	1,408	27.1	145	8.00	1,160	22.3	127	8.00	1016	19.5	168	8.00	1,344	25.9
North Dakota	192	8.38	1,609	30.9	160	8.53	1,535	29.5	166	8.48	1,408	27.1	186	8.51	1583	30.4	173	8.58	1,484	28.6
Ohio	201	8.02	1,612	31.0	189	8.00	1,512	29.1	174	8.01	1,394	26.8	127	8.01	1017	19.6	169	8.01	1,354	26.0
Oklahoma	178	8.06	1,435	27.6	148	8.06	1,193	22.9	115	8.06	927	17.8	120	8.07	968	18.6	178	8.07	1,033	19.9
Pennsylvania, bit.	230	8.02	1,845	35.5	198	8.02	1,588	30.5	169	8.02	1,355	26.1	154	8.02	1235	23.8	162	8.02	1,299	25.0
Tennessee	228	8.24	1,879	36.1	196	8.18	1,603	30.8	171	8.15	1,394	26.8	148	8.27	1224	23.5	161	8.01	1,290	24.8
Texas	212	8.58	1,819	35.0	181	8.69	1,573	30.3	140	8.63	1,208	23.2	152	8.79	1336	25.7	162	8.88	1,439	27.7
Utah	211	8.00	1,688	32.5	168	8.00	1,344	25.9	140	8.00	1,120	21.5	176	8.00	1408	27.1	176	8.00	1,408	27.1
Virginia	249	8.02	1,997	38.4	200	8.01	1,602	30.8	175	8.04	1,407	27.1	144	8.04	1158	22.3	184	8.08	1,487	28.6
Washington	227	8.00	1,816	34.9	205	8.00	1,640	31.5	170	8.00	1,360	26.2	161	8.00	1288	24.8	168	8.00	1.344	25.9
West Virginia, total	247	8.06	1,991	38.3	204	8.07	1,646	31.7	176	8.04	1,415	27.2	168	8.07	1356	26.1	176	8.09	1,586	30.5
Northern	223	8.06	1,797	34.6	192	8.07	1,549	29.8	174	8.01	1,394	26.8	172	8.05	1385	26.6	190	8.01	1.522	29.3
Southern	257		2,071	39.8	208		1,679	32.3	177	8.06	1,426	27.4	167	8.08	1349	26.0	199	8.12	1,616	31.1
Wyoming	230	8.00	1,840	35.4	188	8.00	1,504	28.9	154	8.00	1,232	23.7	150	8.00	1200	23.1	170	8.00	1,360	26.2
Total bituminous*	219	8.08	1,770	34.0	187	8.09	1,513	29.1	160	8.08	1,293	24.9	146	8.10	1183	22.7	167	8.10	1.353	26.0

* Includes several other States producing very small quantities of coal.

Annual data showing the average weekly operating time in individual states may be misleading in that they imply a regularity of operation which does not exist. It is necessary, therefore, to turn to monthly data on average hours worked per week in order to observe the wide fluctuations which occur in working time. The following tables indicate the approximate average hours worked per week by bituminous coal mines in each of the principal States for the years 1929, 1930, and 1932 (the table for the year 1931 may be found in the preceding section). Only the first nine months of 1933 are shown in order to avoid the influence of the Code.

It must be remembered that these figures indicate the average hours worked per week by mines and not by wage earners. The data do show, however, the opportunity for work available to mine workers. Bituminous coal mines in only a few states showed average working time per week in excess of 45 hours for any month during the prosperous year of 1929. These states were Maryland, Oklahoma, North Dakota, Wyoming, Utah and Washington. Coal production in these areas is primarily for domestic markets and highly seasonal. For example, although these states reported particular months when more than 45 hours per week were worked, none of them with the exception of Maryland and Wyoming, averaged more than 35 hours per week for the year. The tables for the succeeding years illustrate similar situations.

No effort has been made in this section of the study, to investigate the economic implications arising out of the movement for shortening the work day and week. That the movement is of fundamental economic significance for the bituminous coal mining industry in terms of trends toward mechanization, effects upon cost of production, and spread of employment cannot be doubted. The treatment in this section is intended to serve as an historical account of the movement. The economic problems and consequences of the shortened work day and week will be discussed in section B of this Chapter dealing with working time and labor costs under the code.

TABLE VIII

APPROXIMATE AVERAGE HOURS WORKED PER WEEK BY BITUMINOUS COAL MINES IN EACH OF THE PRINCIPAL STATES, 1929

average hours worked per week represent mine operating time and are calculated as follows. Each mine reports to the Bureau of Mines the number of hours in its working day and the number of days it operated per year. From this is readily calculated the number of hours operated per year. In this table the known total for the year has been apportioned by months on the assumption that the working time in any month will be proportional to the production of that month. (In averaging the working time, the mines are weighted by their size as indicated by the number of men employed.) The result, though not precise, should approximate closely the average number of hours worked per week in each month of the year by the mines in operation in that year.)

Region and State	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
NORTH													
Ohio	31.0	30.1	31.2	24.2	25.3	26.2	28.9	30.9	31.0	34.3	38.1	34.4	37.9
Pennsylvania	35.5	37.2	37.1	33.7	33.1	34.1	34.8	34.9	34.4	37.0	37.9	37.0	34.9
Maryland	37.9	47.2	46.3	38.3	31.7	31.3	33.9	32.2	33.5	36.1	41.4	41.4	42.7
West Va. (Northern)	34.0	37.5	34.0	31.4	30.8	33.1	34.0	34.0	34.0	36.0	38.7	36.0	32.0
APPALACHIANS													
West Va. (Southern)	39.8	42.1	41.8	35.1	33.2	37.9	38.7	39.4	41.8	44.1	45.0	42.3	36.0
Eastern Kentucky	37.3	39.7	41.2	30.8	31.2	35.4	36.7	36.4	37.7	41.8	42.3	37.2	38.5
Virginia	38.4	41.2	43.6	35.9	34.3	36.7	36.2	34.7	36.3	41.7	41.4	40.4	39.3
Tennessee	36.1	39.6	42.0	32.6	31.2	34.5	33.0	32.8	34.7	36.2	36.4	37.7	38.0
ALABAMA	39.3	43.1	44.4	38.5	40.0	38.7	36.5	36.7	36.9	39.6	41.9	32.2	44.8
MIDDLE WEST													
Michigan	33.4	37.3	39.8	30.8	27.0	29.5	26.3	30.8	34.7	36.0	36.0	37.3	36.0
Indiana	26.5	32.1	35.6	26.0	19.3	22.3	21.4	21.8	22.8	26.8	28.1	28.4	33.9
Illinois	27.2	37.0	38.5	23.4	19.0	20.1	18.9	20.0	23.1	27.9	30.2	31.0	36.5
Western Kentucky	27.6	40.5	39.3	24.5	20.8	20.7	19.1	20.4	23.9	29.4	31.2	29.5	33.0
Iowa	30.0	37.2	44.6	26.5	21.3	21.7	20.2	21.3	24.1	32.4	32.2	39.8	40.4
SOUTHWEST-INTERSTATE													
Missouri	28.6	38.2	40.0	25.5	21.2	22.3	21.4	21.8	20.5	29.5	31.2	34.3	36.9
Kansas	24.7	37.2	39.2	22.7	14.3	14.3	15.8	17.8	22.4	27.2	29.5	27.2	28.8
Oklahoma	27.6	45.1	41.5	20.2	13.7	14.1	15.7	20.2	21.8	31.9	32.8	38.8	36.1
Arkansas	22.6	34.1	36.6	12.7	9.9	9.0	10.7	14.4	18.5	31.6	33.3	29.2	33.7
Texas	35.0	39.9	40.8	33.1	32.1	32.1	30.1	30.0	38.9	36.0	35.0	27.2	36.9
NORTH DAKOTA	36.9	a 52.5	52.5	21.6	17.0	11.8	7.8	9.3	11.3	49.4	42.2	48.9	51.5
ROCKY MOUNTAIN													
Montana	29.0	34.9	40.0	20.1	20.5	21.9	20.0	21.0	27.5	34.9	36.5	37.0	34.1
Wyoming	35.4	45.3	43.7	31.2	28.1	26.7	23.2	24.5	30.0	42.4	40.0	45.8	39.8
Colorado	28.9	41.3	43.2	23.9	21.4	18.3	15.7	17.2	20.4	33.3	32.8	41.4	39.5
New Mexico	32.9	39.3	37.2	30.2	31.4	29.0	28.3	31.0	28.3	31.4	36.8	39.1	34.8
Utah	32.5	50.1	48.2	27.9	24.4	19.	18.2	18.4	23.0	30.0	36.7	43.5	40.6
WASHINGTON	34.9	44.3	49.8	32.8	32.8	27.	30.2	25.1	28.1	35.3	34.9	38.7	40.9
U. S. total (including "other States")	34.0	38.8	39.2	30.1	28.7	28.3	30.3	31.1	32.4	36.6	37.8	36.7	36.8

a Much of State output comes from mines operating 9 or 10 hours a day.

F. G. Tryon
Bureau of Mines
August 9, 1933

TABLE IX

APPROXIMATE AVERAGE HOURS WORKED PER WEEK BY BITUMINOUS COAL MINES IN EACH OF THE PRINCIPAL STATES, 1930

(The average hours worked per week represent mine operating time and are calculated as follows. Each mine reports to the Bureau of Mines the number of hours in its working day and the number of days it operated per year. From this is readily calculated the number of hours operated per year. In this table the known total for the year has been apportioned by months on the assumption that the working time in any month will be proportional to the production of that month. (In averaging the working time, the mines are weighted by their size as indicated by the number of men employed.) The result, though not precise, should approximate closely the average number of hours worked per week in each month of the year by the mines in operation in that year.)

Region and State	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
NORTH													
Ohio	29.1	31.2	29.9	24.5	25.6	27.4	27.7	28.1	28.1	29.0	32.2	34.0	32.0
Pennsylvania	30.5	33.5	32.2	29.9	30.5	29.9	29.7	28.9	28.2	30.6	32.2	31.8	28.7
Maryland	30.3	40.9	37.3	28.7	28.7	22.9	27.8	24.6	25.4	27.8	30.7	31.9	36.0
West Va. (Northern)	29.8	34.2	33.0	29.8	30.4	30.4	29.8	26.3	27.4	28.9	29.2	30.7	28.6
APPALACHIANS													
West Va. (Southern)	32.3	38.3	33.2	27.0	30.2	31.2	31.6	32.6	32.6	35.5	34.9	33.1	27.8
Eastern Kentucky	31.2	38.5	34.5	25.8	30.3	30.6	29.7	29.0	30.1	33.2	33.3	31.0	28.5
Virginia	30.8	38.0	36.8	30.7	29.2	27.4	27.5	26.3	26.7	31.4	31.5	33.4	31.4
Tennessee	30.8	36.9	32.5	29.9	30.6	28.8	28.4	27.5	27.7	30.1	31.4	33.2	33.0
ALABAMA	32.8	41.7	38.5	32.5	34.4	31.5	29.4	27.4	28.1	30.5	32.5	34.0	33.3
MIDDLE WEST													
Michigan	28.8	38.0	34.0	32.7	19.6	17.0	20.9	26.2	13.1	27.5	35.3	39.3	38.0
Indiana	24.2	32.0	29.7	23.8	21.7	19.8	18.6	18.3	20.6	23.5	26.1	28.3	28.4
Illinois	24.0	35.5	28.4	22.6	20.2	18.0	17.2	18.0	20.1	22.4	27.6	29.1	29.2
Western Kentucky	23.1	37.2	29.8	22.8	18.7	17.4	17.7	18.1	20.3	23.6	23.6	23.4	25.1
Iowa	23.9	38.2	28.0	22.8	19.4	16.4	16.7	15.6	18.3	23.0	28.6	27.7	31.8
SOUTHWEST-INTERSTATE													
Missouri	25.6	35.6	31.6	24.0	22.7	19.7	20.6	22.3	25.0	24.4	27.4	27.4	27.4
Kansas	19.4	28.2	26.8	15.5	13.8	11.8	11.5	13.3	14.0	20.1	24.8	25.0	29.0
Oklahoma	22.9	46.3	33.5	11.8	13.3	11.6	14.1	15.1	18.1	23.4	33.2	28.9	25.7
Arkansas	17.7	31.2	21.9	7.4	7.4	6.7	8.9	12.0	15.2	24.1	30.1	23.4	24.1
Texas	30.3	32.6	44.9	34.8	21.3	21.3	22.6	24.7	28.1	35.9	31.4	30.3	40.3
NORTH DAKOTA	29.5	56.3	36.5	25.2	12.1	10.5	11.6	10.5	12.2	30.0	+ 57.5	52.1	38.5
ROCKY MOUNTAIN													
Montana	26.9	40.0	29.4	22.3	19.5	19.3	20.1	19.3	21.7	28.3	36.2	34.0	31.0
Wyoming	28.9	43.9	28.8	25.1	22.6	21.6	20.4	21.3	26.0	32.8	35.5	35.3	33.6
Colorado	26.0	* 47.4	30.3	22.1	14.6	18.1	15.3	16.7	16.3	25.9	31.8	35.7	38.0
New Mexico	27.1	41.1	27.9	22.4	24.1	25.0	25.0	21.6	21.6	20.3	32.2	35.6	28.8
Utah	25.8	47.9	29.0	18.6	12.4	12.3	11.2	11.9	16.5	30.3	36.0	42.1	41.6
WASHINGTON	31.5	45.0	32.3	29.4	26.0	25.6	26.9	24.7	25.2	31.2	37.4	37.8	36.5
U. S. total (including "other states")	29.1	36.3	31.9	26.7	27.0	26.4	26.2	25.9	26.6	29.6	31.7	31.7	29.6

+ A large proportion of the output in this State came from mines operating 9 and 10 hours a day.
* Denver experienced the coldest weather of record in this month.

F. G. Tryon
Bureau of Mines
August 6, 1933.

TABLE X

APPROXIMATE AVERAGE HOURS WORKED PER WEEK BY BITUMINOUS COAL MINES IN EACH OF THE PRINCIPAL STATES, 1932

(The average hours worked per week represent mines operating time and are calculated as follows. Each mine reports to the Bureau of Mines the number of hours in its working day and the number of days it operated per year. From this is readily calculated the number of hours operated per year. In this table the known total for the year has been apportioned by months on the assumption that the working time in any month will be proportional to the production of that month. (In averaging the working time, the mines are weighted by their size as indicated by the number of men employed.) The result, though not precise, should approximate closely the average number of hours worked per week in each month of the year by the mines in operation in that year.)

Region and State	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
NORTH													
Ohio	20.1	28.7	26.1	26.4	7.0	6.4	7.2	12.1	15.6	21.1	29.1	30.5	31.5
Pennsylvania	23.9	24.1	24.2	25.4	25.4	20.6	19.0	19.4	20.7	24.1	28.6	28.7	26.3
Maryland	23.0	30.8	32.5	31.6	24.2	18.0	13.6	13.9	15.6	20.2	23.3	23.9	29.1
West Va. (Northern)	26.7	29.2	31.7	30.7	30.9	28.5	22.4	22.3	21.9	25.0	27.8	26.7	22.8
APPALACHIANS													
West Va. (Southern)	26.2	24.9	26.0	27.2	23.5	21.9	20.8	20.8	25.1	29.4	34.2	31.5	28.3
Eastern Kentucky	24.7	22.0	23.2	25.6	18.9	18.9	19.3	20.1	25.4	30.4	33.7	31.5	27.2
Virginia	22.4	23.5	24.4	23.3	18.2	17.4	17.3	17.1	19.7	25.6	27.9	27.8	26.8
Tennessee	23.5	26.9	25.0	27.6	19.9	18.8	18.4	18.0	19.0	22.9	28.7	27.4	29.2
ALABAMA	17.6	19.3	18.6	18.1	16.7	16.5	13.6	13.0	15.1	17.6	21.3	21.7	20.3
MIDDLE WEST													
Michigan	24.8	36.5	37.1	39.0	26.6	12.0	5.0	6.1	7.1	20.5	31.4	37.5	38.8
Indiana	22.1	25.3	27.4	33.1	11.3	14.5	15.2	15.3	15.4	22.1	28.1	28.5	29.1
Illinois	17.3	25.9	28.7	37.7	2.3	3.4	3.9	5.1	10.5	16.0	21.7	25.1	26.9
Western Kentucky	23.1	22.0	21.2	22.2	16.6	19.9	19.5	23.4	23.2	25.0	29.6	25.8	29.1
Iowa	24.4	30.1	32.1	30.7	22.2	17.5	18.6	16.3	17.0	24.1	26.1	29.1	29.9
SOUTHWEST-INTERSTATE													
Missouri	25.2	30.4	30.2	29.3	15.0	15.6	18.5	20.8	20.4	22.7	29.9	34.7	35.0
Kansas	20.1	28.4	25.1	20.0	13.4	11.7	11.7	10.7	12.4	20.6	28.6	29.7	29.6
Oklahoma	18.6	25.0	17.9	14.0	6.0	5.6	7.0	11.6	9.9	19.8	36.9	39.2	30.3
Arkansas	14.2	20.9	18.2	10.0	3.6	4.1	3.7	1.4	4.0	19.0	37.8	27.2	21.0
Texas	24.9	27.2	25.2	25.2	20.8	21.4	26.3	24.2	23.3	27.0	26.5	26.8	26.5
NORTH DAKOTA	28.9	46.1	42.6	33.0	14.8	12.3	10.3	8.5	10.6	26.4	45.6	50.3	47.6
ROCKY MOUNTAIN													
Montana	21.6	28.2	29.5	22.7	12.7	13.4	13.3	9.9	12.4	23.7	29.8	34.4	30.6
Wyoming	21.8	36.8	27.5	20.4	17.4	16.4	15.5	11.8	16.9	25.2	30.5	27.0	26.4
Colorado	21.5	35.6	28.5	24.3	12.6	9.6	9.7	8.2	12.0	24.9	29.3	28.8	34.9
New Mexico	19.8	27.7	21.5	18.5	18.0	15.1	15.0	12.7	15.8	18.8	23.9	26.5	24.2
Utah	19.6	34.4	31.1	16.1	11.7	9.1	7.2	6.5	12.1	20.1	25.2	25.6	37.3
WASHINGTON	23.7	31.4	32.2	25.4	21.5	19.6	18.2	14.3	15.9	23.1	25.3	27.9	28.8
U. S. total (including "other States")	22.8	25.3	26.0	27.6	18.0	16.6	15.7	16.3	19.3	23.9	28.9	28.6	27.6

TABLE XI

APPROXIMATE AVERAGE HOURS WORKED PER WEEK BY BITUMINOUS COAL MINES IN EACH OF THE PRINCIPAL STATES

First Nine Months (Pre-Code) 1933

Region and State	January	February	March	April	May	June	July	August	September
North									
Ohio	24.7	27.5	21.4	16.4	19.1	21.9	27.0	34.6	33.3
Pennsylvania	24.6	24.8	22.2	20.5	22.5	27.0	31.5	31.8	20.8
Maryland	31.0	30.4	24.5	20.4	19.1	19.1	24.8	31.5	29.3
West Virginia (Northern)	25.5	25.1	22.2	20.2	22.7	26.6	34.9	38.0	39.1
Appalachian									
West Virginia (Southern)	30.3	31.6	24.1	23.5	26.1	31.7	38.4	40.2	38.3
Kentucky (Eastern)	25.4	28.8	20.6	19.6	23.0	28.5	34.9	37.6	37.6
Virginia	26.2	29.1	23.1	22.8	24.7	30.2	37.8	37.0	32.3
Tennessee	26.6	27.2	20.9	19.7	21.1	25.0	31.9	33.8	28.7
Alabama	26.6	24.4	20.1	21.3	22.7	23.4	32.1	32.7	32.3
Middle West									
Michigan	32.8	34.7	27.3	6.8	6.4	5.8	6.7	7.4	10.4
Indiana	28.1	30.8	22.6	19.7	18.1	18.6	21.6	24.6	25.6
Illinois	25.9	28.6	22.3	15.9	14.6	14.8	18.1	19.6	21.9
Kentucky (Western)	25.5	27.8	20.5	16.2	15.0	13.7	19.5	22.4	25.1
Iowa	28.7	32.4	23.9	16.5	16.7	15.1	14.9	16.3	15.9
Southwest-Interstate									
Missouri	28.4	37.3	24.2	16.7	15.1	15.1	16.0	20.2	19.9
Kansas	29.3	28.5	19.0	16.6	13.5	15.3	17.3	24.4	22.0
Oklahoma	21.6	28.8	6.4	5.8	8.0	11.4	16.6	27.1	27.4
Arkansas	17.2	20.1	5.9	4.0	3.9	5.7	10.8	20.4	24.1
Texas	24.9	26.7	26.2	25.8	26.8	29.2	31.7	32.0	34.4
North Dakota	42.2	49.6	27.4	15.5	10.5	9.3	11.0	14.2	31.9
Rocky Mountain									
Montana	30.0	33.4	21.9	16.2	17.9	15.4	18.9	22.2	26.1
Wyoming	26.4	28.0	20.0	21.2	20.1	18.5	20.9	22.1	31.5
Colorado	29.8	35.1	19.2	17.0	15.1	9.8	11.1	19.0	31.7
New Mexico	32.5	34.4	21.5	18.9	20.5	21.1	22.9	23.9	27.0
Utah	41.1	48.1	19.4	15.7	16.6	12.0	14.2	20.0	34.3
Washington	34.4	35.8	23.6	20.8	21.4	20.1	23.5	23.9	20.6
U. S. Total a/	26.9	28.5	22.0	19.4	20.9	23.7	28.9	31.0	28.8

a/ Includes Alaska, Arizona, California, Georgia, Idaho, North Carolina, Oregon, South Dakota, which are relatively unimportant code-producing states.

CHAPTER IV 1/

SECTION B. WAGE RATES AND HOURS: EMPLOYMENT AND EARNINGS UNDER THE CODE.

Labor Costs: Major Factor in Costs, Sales Realization and Value of Product.

The bituminous coal industry occupies a unique position among the basic industries in the employment afforded by it as well as in the proportion of the total cost of production and the value of product represented by labor cost. With the exception of agriculture and transportation no other single industry employs as many people as bituminous coal. Similarly, the bituminous coal industry stands out from other industries in that its labor cost exceeds 60 percent of the total cost of production. For example, in the reports made by the industry to the N.R.A, the mine labor cost in Division I, representing about 70 percent of the national tonnage, was 65.2 percent of the total cost of production, excluding selling and administrative costs (see Table I) for the 5-month period November, 1933 to March, 1934. The labor cost for the 10 month period - April, 1934 to January, 1935 (7-hour day) in this area was 66.7 percent of the total production cost.

The labor cost per ton in Division II is smaller in proportion to total production than in either Division I or III. During the period November, 1933 - March, 1934, the labor cost was about 73 cents per ton or 60.4 percent of the total production cost, while in the following 10-month period of labor cost rose to 83 cents per ton but maintained about the same proportion to production cost. It will be noted that Indiana's labor cost was only 53 percent of the total production cost.

The explanation for the relatively lower labor costs in Division II (Indiana and Illinois -- Iowa was excluded because of insufficient data) is to be found in the fact that this area has a considerable tonnage produced by strip mining operations.

The increased significance in the labor cost as related to the total production cost in the 10-month period as against the 5-month period is to be explained by the Amendments 1, 2 and 3 to the Bituminous Coal Code which increased wage rates and reduced the hours in the working day from 8 to 7.

1/ Prepared by Louis Levine.

TABLE I

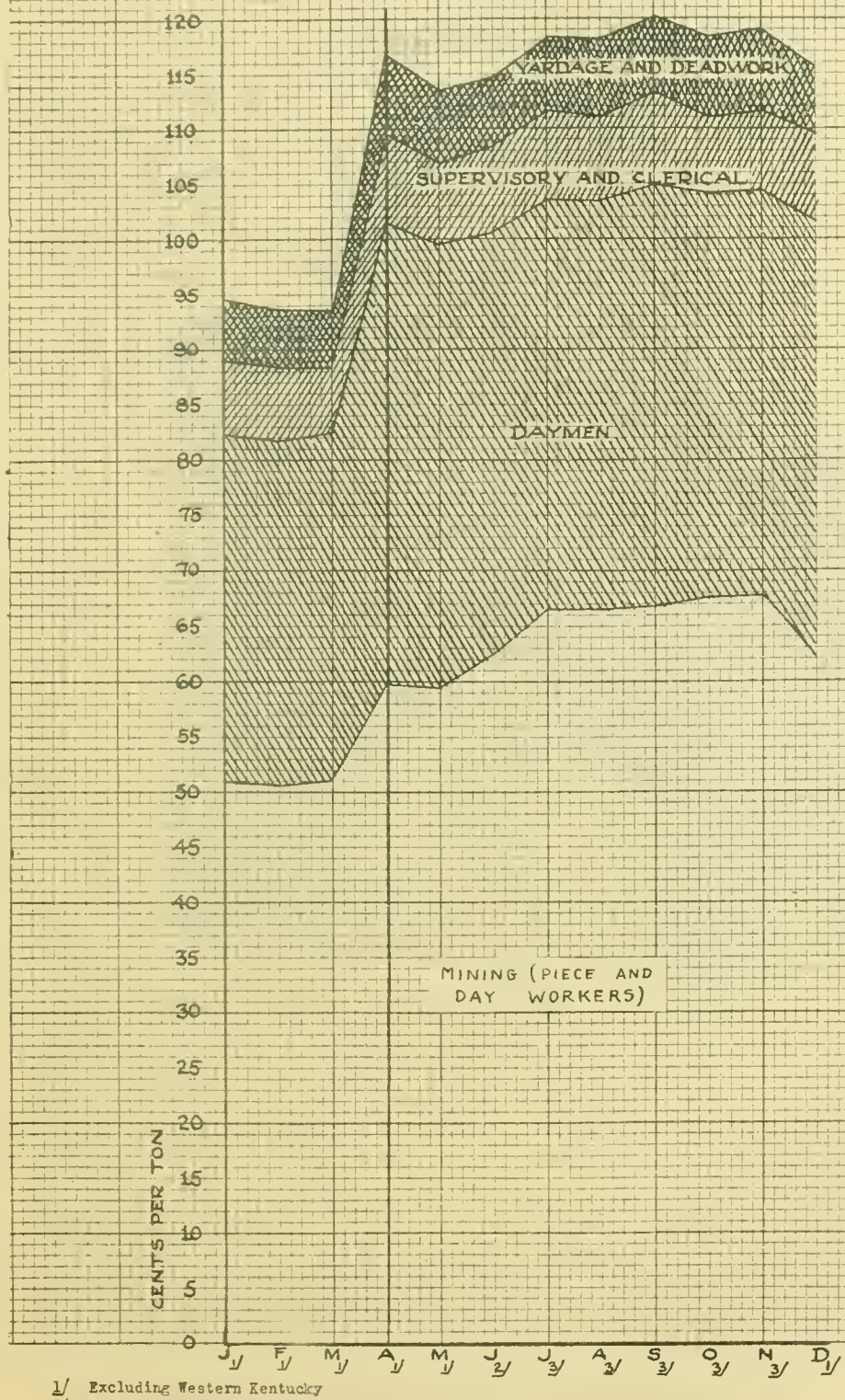
PER CENT OF MINE LABOR COST TO TOTAL PRODUCTION COST (*) IN SPECIFIED BITUMINOUS COAL PRODUCING AREAS FOR THE PERIODS NOVEMBER, 1933, - MARCH, 1934 AND APRIL, 1934 - JANUARY, 1935.

(Based on Bituminous Coal Unit, N.R.A. Form A Reports)

Coal Producing Areas	5 Month Period November, 1933 - March, 1934			10 Month Period April, 1934 - January, 1935		
	Labor Cost	Total Production Cost	Per Cent Labor Cost is of Production Cost	Labor Cost	Total Production Cost	Per Cent Labor Cost is of Production Cost
Eastern Sub-Division	1.0695	1.5885	67.3	1.2968	1.9306	67.2
Western Pennsylvania	$ .9895	$1.5364	64.4	$1.1901	$1.8083	65.8
Ohio	.9534	1.3895	68.6	1.1507	1.6506	69.7
Michigan	1.5703	2.4514	64.0	1.9308	2.9349	65.8
Panhandle a/	.9823	1.4600	67.3	1.1281	1.5860	71.1
Northern West Virginia	.7749	1.1593	66.8	.9957	1.4617	68.1
Southern No. 1	.9427	1.4877	63.4	1.1459	1.7496	65.5
Southern No. 2	.8763	1.3640	64.2	1.0884	1.6265	66.9
Total Division I 1/	.9427	1.4467	65.2	1.1519	1.7265	66.7
Indiana (deep & strip)	.6049	1.1402	53.0	.7191	1.3507	53.2
Illinois (deep & strip)	.7754	1.2328	62.9	.8663	1.3813	62.7
Total Division II 2/	.7299	1.2081	60.4	.8291	1.3739	60.3
Alabama, So. Tenn., and Georgia b/	1.1218	1.7484	64.1	1.4130	2.0919	67.5
Total Division III 3/	1.1218	1.7484	64.1	1.4130	2.0919	67.5

* Exclusive of selling and administrative costs.
1/ Excluding Western Kentucky - insufficient data.
2/ Excluding Iowa - insufficient data.
3/ Division III did not report for January, 1935.
a/ Panhandle did not report March, 1934.
b/ So. Tenn. and Georgia did not report April and December, 1934 data.

LABOR COST PER TON FOR DIVISION I 1934



1/ Excluding Western Kentucky
2/ Excluding Western Kentucky and Southern Subdivision # 1
3/ Excluding Western Kentucky and Southern Subdivision # 1 and Southern Subdivision # 2

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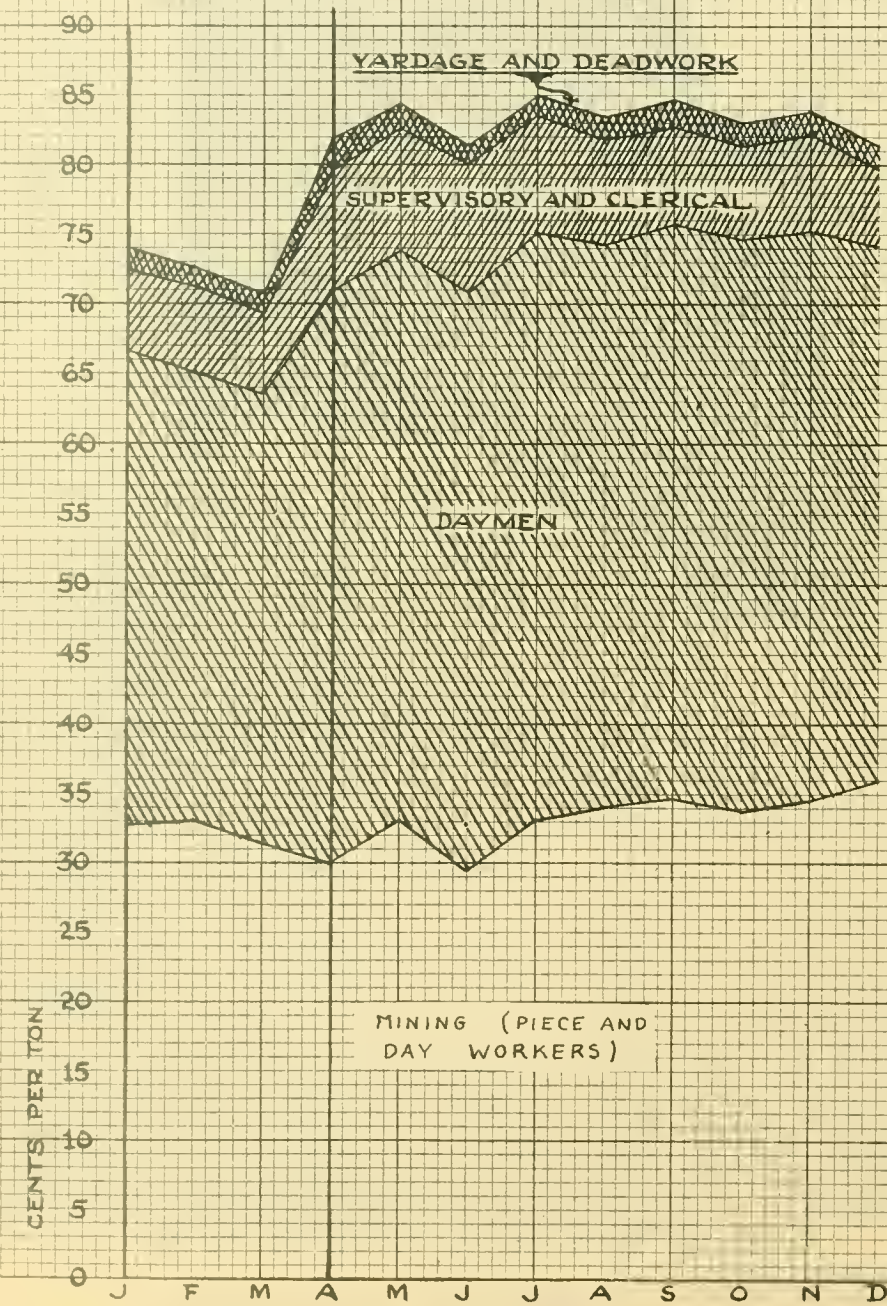
CROSS SECTION
TRADE ☆

LABOR COST PER TON FOR DIVISION II * 1934



(*) Excluding Iowa which did not report in 1934

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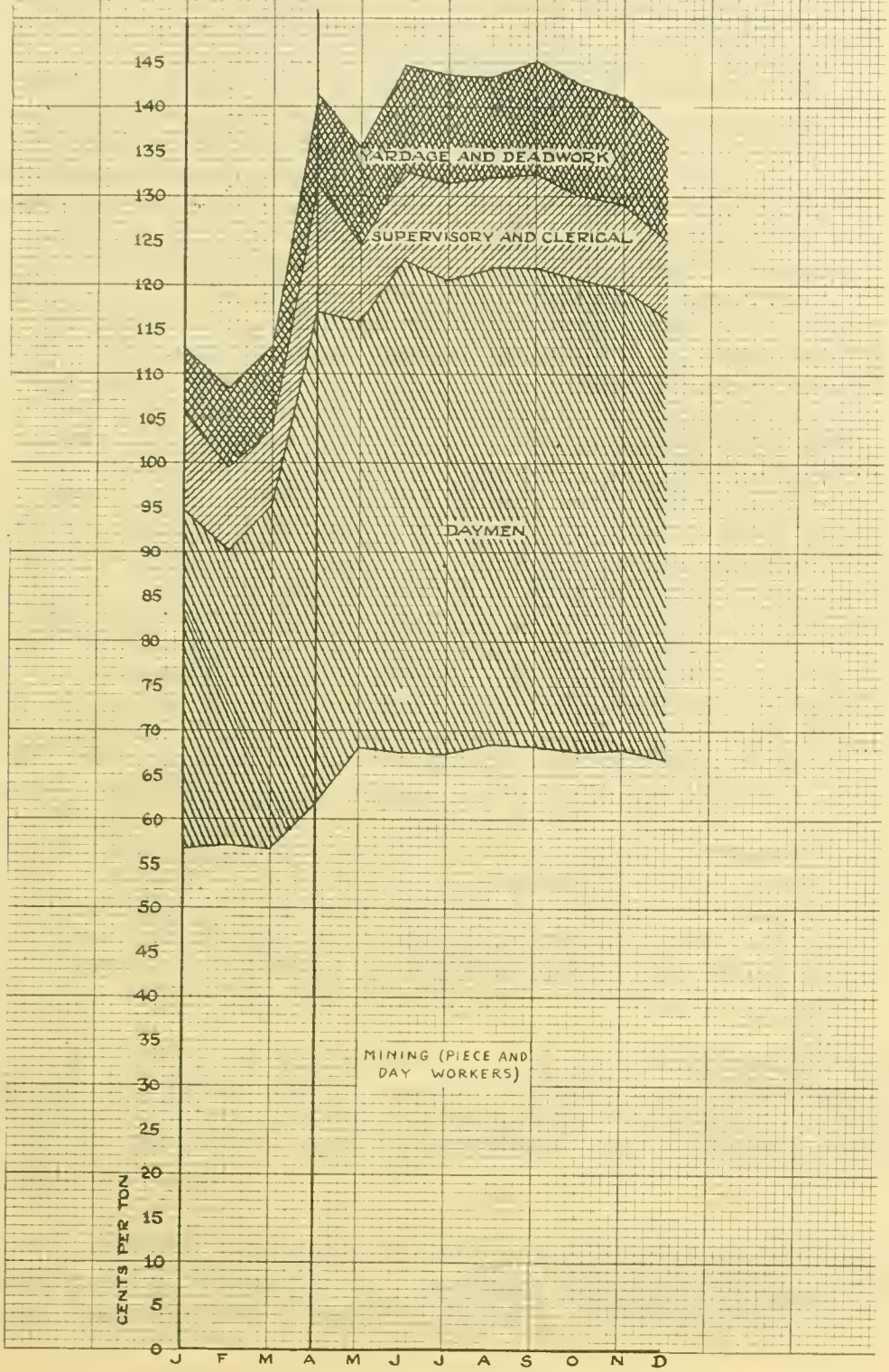
LABOR COST PER TON FOR DIVISION III * 1934



(*) Southern Tennessee and Georgia did not report in April.

Table II shows the relation of wages to value of bituminous coal based upon the f.o.b. mine price in the years 1919, 1922, 1929, and 1934. These years are the only ones for which sufficiently large coverage of wage data are available. Thus the wage cost per ton data for the years 1919 and 1929 are derived from the Bureau of Census; 1922 data are based upon the U. S. Coal Commission survey; and the 1934 data are those reported to the NRA. The figures for production and f.o.b. mine price are those reported by the U. S. Bureau of Mines (except that 1934 value per ton is based upon a combination of NRA and Bureau of Mines data). The selected coal producing areas shown on Table II are among the most important ones in the country and represent more than 85 per cent of the national tonnage. Wages in most instances were in excess of 60 per cent of the total value of product. However, these percentages vary from one observation date to another because of various changes taking place in the relationship between wage costs and realization. Alabama, for example, shows wages as 60.3 per cent of total value in 1922 as against 67.2 per cent in 1919. This decrease in the wage percentage is largely attributable to the fact that Alabama by 1922 had become non-union and wage reductions had taken place. In 1929, however, Alabama shows an increase in the percentage (68.3) of wages in the total value. This increase is not due to an increase in wage costs -- as a matter of fact wages changed only slightly, but f.o.b. mine prices declined from $2.34 per ton to $2.08. Other factors than changes in relationship between wages and value must also be considered. A large output in a particular year may signify greater regularity in operation and thus reduced wage costs per ton. Again, changes in the technique of mining -- increasing mechanization -- may mean lowered wage cost. In both Indiana and Illinois the percentage represented by wages of the total value declined sharply between 1922 and 1934 (Indiana from 68.1 to 44.4; Illinois from 68.9 to 52.3). During the same period f.o.b. mine prices dropped in both states (Indiana from $2.85 per ton to $1.54; Illinois from $2.89 to $1.60), but wages per ton fell even more sharply (Indiana from $1.94 to .684; Illinois from $1.99 to .837). The reduction in wage cost, however, is not due primarily to lowered wage rates in these two highly unionized states. In fact until 1928 mine workers in both Indiana and Illinois enjoyed a $7.50 basic day rate and from 1928 to 1932 a $6.10 basic day rate and after the latter date $5.00 a day. The explanation for the declining wage costs per ton lies in the extensive development of strip mining operations in both these States. The percentage of the state tonnage produced by strip mines between 1932 and 1933 increased in Indiana from 7.2 to 36.8 and in Illinois from 1.2 to 15.0. The tendency to extend stripping operations, as well as mechanization, is due largely to the high union wage scales in an effort to reduce wage costs per ton. (*)

Another indication of the position of the bituminous coal industry as regards the wage factor may be secured in comparing this industry with other industries. Table III shows the wage bill, value added by production and the per cent which wages represented of that value for specific major industries in 1929.

(*) Kiessling, O. E., Tryon, F. G., and Mann, L., The Exonomics of Strip Mining, Bureau of Mines, Economic Paper 11, 1931, pp. 8-9.

TABLE II

Relation of Wages to Value – F.O.B. Mine – Bituminous Coal Period 1919 - 1922 - 1929 - 1934

	Production 1919 Bureau of Mines	Production 1922 Bureau of Mines	Production 1929 Bureau of Mines	Production 1934 Bureau of Mines	Wages-Per Ton 1919 Bureau of Census including supervisory & clerical	Wages-Per Ton 1922 Coal Commission including supervisory & clerical	Wages-Per Ton 1929 Bureau of Census including supervisory & clerical	Wages-Per Ton 1934 N.R.A. includes supervisory and clerical
1/ Pennsylvania	180758134	111702000	143516241	89826000	151	184	116	5/ 117
1/ Ohio	35876622	26465000	23689477	20842000	148	196	106	6/ 109
No. W. Va.	17824000	16594000	30210000	19114000	DATA	183	869	925
So. No. 1	32224000	35099000	56495000	43972000	NOT	137	1085	1090
So. No. 2	38306000	64939000	106546000	72526000	AVAILABLE	147	1026	1030
1/ Indiana	20912250	18940000	18344338	14820000	149	194	103	684
1/ Illinois	60862608	58378000	60657641	40905000	158	199	120	837
1/ Alabama	15536721	18229000	17969923	9596000	199	141	142	8/ 133

	Wages-Amount 1919 Projected on Bureau of Mines Tonnage	Wages-Amount 1922 Projected on Bureau of Mines Tonnage	Wages-Amount 1929 Projected on Bureau of Mines Tonnage	Wages-Amount 1934 Projected on Bureau of Mines Tonnage	Value-Per Ton 1919 Bureau of Mines	Value-Per Ton 1922 Bureau of Mines	Value-Per Ton 1929 Bureau of Mines	Value-Per Ton 1934 N.R.A. Bureau of Mines
1/ Pennsylvania	227644813	205531680	166478840	105096420	242	311	180	• 184
1/ Ohio	53097484	52224200	25110846	22717760	222	323	151	3/ 180
No. W. Va.	DATA	30367020	26252490	17680450	DATA 4/	236	132	1530
So. No. 1	NOT	48084260	59815225	47951280	NOT 4/	220	176	1960
So. No. 2	AVAILABLE	95460330	109623496	74701780	AVAILABLE 4/	238	160	1765
1/ Indiana	31154309	36763000	18894689	10136880	222	285	163	154
1/ Illinois	96162921	116172220	72789169	34237485	230	289	187	160
1/ Alabama	30918035	25702890	25480371	12762680	296	234	208	• 2/ 206

	Value-Amount 1919 Projected on Bureau of Mines Tonnage	Value-Amount 1922 Projected on Bureau of Mines Tonnage	Value-Amount 1929 Projected on Bureau of Mines Tonnage	Value-Amount 1934 Projected on Bureau of Mines Tonnage	Percent Wages of Total Value 1919 Bureau of Mines	Percent Wages of Total Value 1922 Bureau of Mines	Percent Wages of Total Value 1929 Bureau of Mines	Percent Wages of Total Value 1934 N.R.A. Bureau of Mines	Range of Wage Ratio
1/ Pennsylvania	364914733	347393220	258329234	165279840	624	592	644	636	52
1/ Ohio	79646234	86063350	35771110	37515600	667	607	702	606	96
No. W. Va.	DATA	47452840	39877200	29244420	DATA	640	658	605	53
So. No. 1	NOT	77215600	99783200	86224320	NOT	623	599	556	67
So. No. 2	AVAILABLE	154534820	170953600	128008347	AVAILABLE	618	641	684	57
1/ Indiana	46425779	54007500	29901306	22822800	671	681	632	444	237
1/ Illinois	139983998	168712420	113424719	65448000	687	689	642	523	166
1/ Alabama	45988694	42655860	37323440	19767760	672	603	683	646	80

Percentage Increase - Decrease in Wage Cost Per Ton and Realization Per Ton

		1922 over 1919	1929 over 1922	1934 over 1929
1/ Pennsylvania	Wage Cost	21.9 +	37.0 -	0.9 +
	Realization	28.5 +	42.1 -	2.2 +
1/ Ohio	Wage Cost	32.4 +	45.9 -	2.8 +
	Realization	45.5 +	53.3 -	19.2 +
No. W. Va.	Wage Cost	DATA	52.8 -	6.4 +
	Realization		53.8 -	15.9 +
So. No. 1	Wage Cost	NOT	23.0 -	3.3 +
	Realization		20.9 -	11.4 +
So. No. 2	Wage Cost	AVAILABLE	30.2 -	0.3 +
	Realization		32.8 -	10.3 +
1/ Indiana	Wage Cost	30.2 +	46.9 -	31.0 -
	Realization	28.4 +	42.8 -	5.5 -
1/ Illinois	Wage Cost	25.9 +	38.1	30.3 -
	Realization	25.7 +	35.3 -	14.4 -
1/ Alabama	Wage Cost	29.1 -	0.7 +	6.3 -
	Realization	20.9 -	11.1 -	1.0 -

1/ Includes deep and strip mines.

2/ Calculated on basis of 90.5% of tonnage which reported value

3/ Calculated from Coal Commission Report, by fields.

4/ Deep for deep mines only.

Percent of State Tonnage Produced by Strip Mines

	1919	1922	1929	*1933
Pennsylvania	04	17	05	03
Ohio	49	117	75	51
Indiana	49	72	306	368
Illinois	07	12	89	150
Alabama	18	20	18	06

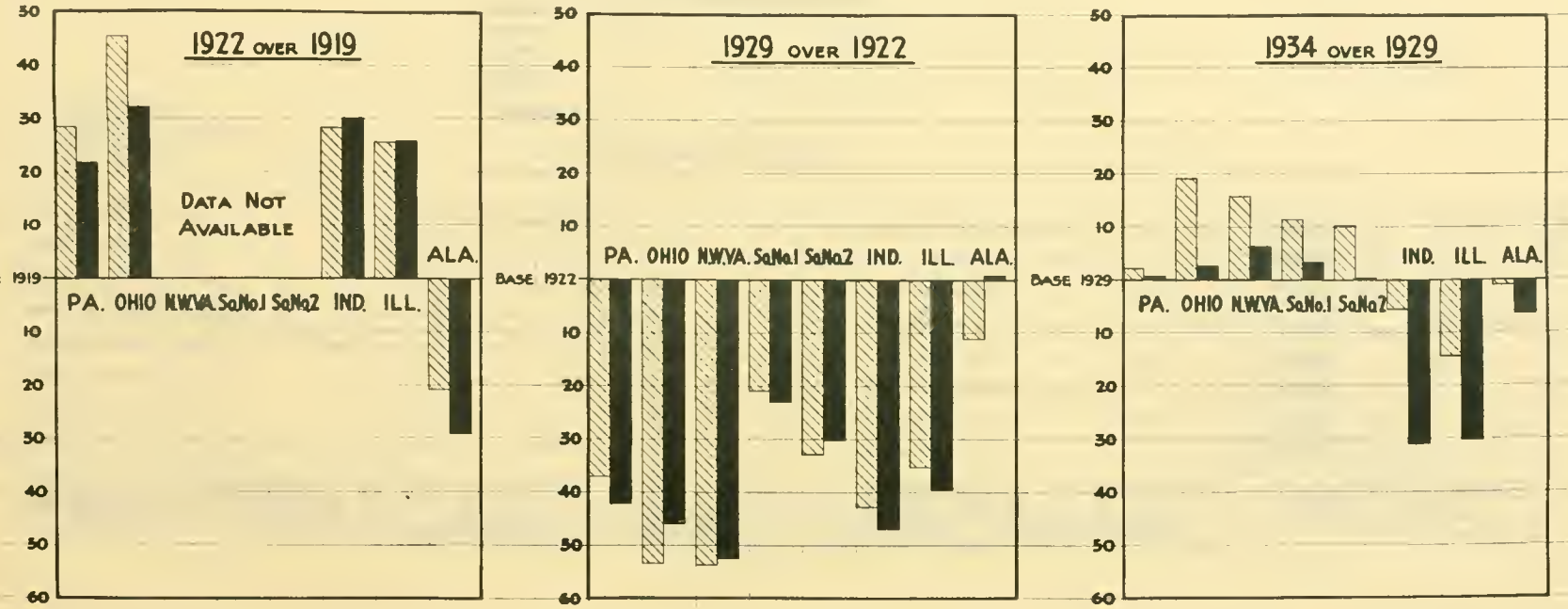
*/ Percentage of Strip Tonnage not Available for 1934

Relation of Wages to Realization – Strip Mines 1934

Indiana	309
Illinois	287

CHART I

Percentage Changes in Relation of Wage Cost to Realization – 1922 over 1919 – 1929 over 1922 – 1934 over 1929



LEGEND
Percent Change in Wage Cost
Percent Change in Realization

WAGE DATA
1921 and 1929 - Bureau of Census
1922 - U.S. Coal Commission
1934 - N.R.A.

REALIZATION
U.S. Bureau of Mines except in 1934 for Ohio, No. W.Va., So. No. 1, So. No. 2 Indiana and Illinois, which are N.R.A.

PREPARED BY
Bituminous Coal Unit, Division of Review, N.R.A. Under the direction of F.E. Borquist

Value added by production is used in this table rather than value of product because it is a more accurate indication of the wage factor significance in a particular industry. For example, motor-vehicles, not including motor-cycles, show the value added by production as $1,321,281,511 and wages as 27.7 per cent of that amount. If, however, the value product be taken, the amount would be $3,722,793,274 and wages would represent only 9.8 per cent of that amount. Clearly, the difference between the value product and the value added by manufacture is to be explained largely by the cost of materials. It should be remembered that these materials already have wage costs and so there is a duplication in the value product. The manufacturing industries selected for comparison were only those paying wages in excess of $100,000,000 in 1929 and the mining and quarrying industries listed were only those whose wage bill exceeded $50,000,000 in that year. It will be noted that wages in the bituminous coal industry were 69.9 per cent of the value added by production (almost the same as anthracite). No other industry, except railroad repair shops, approaches that high a percentage. Railroad repair shops show wages to be 88.2 per cent of the value added by production, but it must be remembered that this industry is not really comparable since the process is almost entirely labor. The only other industries showing very significant percentages in wage costs are motor-vehicle bodies and parts (53.8), cotton goods (51.8), and clay products (50.1). All of these percentages are considerably lower than that of bituminous coal mining.

In view of the significant role played by wages in the bituminous coal industry, questions of wage adjustments and policies are matters of paramount importance. Wage payments are dependent upon a number of factors, most important of which for labor are productivity and union organization and for operators - marketability and sales realization. In bituminous coal, because the demand for coal is relatively inelastic (despite inroads of substitute fuels) and over development is general, the price structure prior to the Code was highly unstable and any increase in labor costs (especially in wage contracts) would have to be absorbed by the operator. Decreasing realization per ton, so generally characteristic of the industry from 1922 to 1933, meant increased efforts to reduce the most expensive cost item, namely, labor. The negotiations over wage adjustments in the industry developed serious disturbances and unrest. (*) This situation was intensified by the competition between the union and non-union fields.

The relationship between wage costs and mine prices has been set forth in Table II. The section of that table headed "Percentage Increase or Decrease in Wage Cost Per Ton and Realization Per Ton" is graphically presented in Chart I. This chart shows the relationship of changing wage costs to changing prices. When sales realizations per ton decrease, there is usually an accompanying intensification of competition to secure markets and also an increased effort to reduce costs whether by non-union operations, reduced wage rates, or new techniques and mechanization. On the other hand, when sales realization per ton increases, there is a lag in the rise of wage costs (partly because higher prices give impetus to more continuous operation and so more efficiency and lowered production

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(*) See Chapter IV, section on "Collective Bargaining".

TABLE III

RATIO OF WAGES PAID TO VALUE ADDED BY PRODUCTION IN MAJOR INDUSTRIES, 1929 [1]

(Manufacturing industries listed include all individual industries paying more than $100,000,000 in wages in 1929. Mining and quarrying industries listed include all individual industries paying more than $50,000,000 in wages in 1929.)

Industry	Wages	Value Added by Production [2]	Percent of Wages to Value Added
Mining			
Bituminous Coal	$ 574,800,072	$ 821,986,689	69.9
Anthracite Coal	229,967,059	327,558,561	70.2
Copper	73,199,785	224,284,690	32.6
Petroleum and Natural Gas [3]	167,989,615	687,126,983	24.4
Manufacturing			
Boots and Shoes, other than rubber	222,407,732	450,867,448	49.3
Bread and other bakery products	274,561,581	789,011,311	34.8
Car and general construction & repairs, steam railroad repair shops	590,202,724	668,872,810	88.2
Clay products (other than pottery) and non clay refractories	106,918,327	213,235,771	50.1
Clothing (except work clothing) men's, youth's and boys' not elsewhere classified	179,768,808	460,599,226	39.0
Clothing, womens' not elsewhere classified	243,851,143	775,166,822	31.5
Cotton Goods	324,289,094	626,148,110	51.8
Electrical machinery, apparatus and supplies	456,377,629	1,329,897,949	34.3
Foundry and machine-shop products, not elsewhere classified	697,508,589	1,753,395,872	39.8
Furniture, including store and office fixtures	242,832,096	521,662,189	46.5
Iron and steel: steel works and rolling mills	689,015,541	1,461,705,648	47.1
Knit Goods	210,714,335	443,015,714	47.6
Lumber and timber products, not elsewhere classified	421,584,874	853,868,932	49.4
Meat packing, wholesale	165,867,420	460,526,341	36.0
Motor-vehicle bodies and motor vehicle parts	366,503,385	680,944,156	53.8
Motor vehicles, not including motor cycles	366,579,233	1,321,281,511	27.7
Nonferrous-metal alloys and products, not including aluminum products	116,943,996	309,393,137	37.8
Paper	140,398,374	392,578,048	35.8
Petroleum refining	131,176,993	608,323,593	21.6
Planing-mill products (including general mill work) not made in planing mills connected with saw mills	116,422,664	257,574,999	45.2
Printing and publishing, book and job	251,576,692	739,907,403	34.0
Rubber tires and inner tubes	127,081,975	340,569,919	37.3
Silk and rayon manufactures	137,547,146	319,018,971	43.1

1/ Sources: U.S. Census of Mines and Quarries, 1929
U.S. Census of Manufactures, 1929, Volume I, pages 21 to 34

2/ Value added by production in case of mining excludes cost of supplies, fuel and power purchased; in case of manufactures, cost of materials, containers for products, fuel, and purchased electric energy were excluded.

3/ Figures for petroleum and natural gas are for 1919, U.S. Census of Mines and Quarries, 1919, p. 40.

costs and partly because in unionized areas wage rates set forth in contracts are more rigid). No set formula applies to this relationship because of local conditions. Thus in 1922 as contrasted with 1919, Pennsylvania realization advanced 23.5 per cent while wage costs rose 21.9 per cent. In Ohio, realization increased 45.5 per cent while labor advanced 32.4 per cent. The gain in labor costs was more proportionate in Illinois (labor cost rose 25.9 per cent and realization 25.7) and in Indiana (labor rose 30.2 per cent; realization, 23.4 per cent). Realization in Alabama declined 20.9 per cent while labor costs decreased (area became non-union) 29.1 per cent. It must be remembered that 1922 is not a satisfactory year for purposes of comparison because even though data are available for that year, it was also the period of the greatest strike in the industry's history.

In 1929, as against 1922, all fields showed a great decrease in realization and wage costs declined in all areas except Alabama. Generally speaking, the changes in wage costs corresponded more closely to the changes in realization during this period than during the period preceding 1922. To a large extent this correlation is explained by the fact that most of the areas (except Indiana and Illinois) had become non-union by 1929 and so wage reductions were made as prices declined. In the case of Indiana andIllinois the greater decrease in wage costs is explained by the extension of stripping operations referred to in the preceding pages.

The data, comparing 1934 with 1929, indicate increases in both realization and wage costs for Pennsylvania, Ohio, Northern West Virginia, Southern No. 1 and Southern No. 2, while in Indiana, Illinois and Alabama there were decreases in realization and wage costs. It is significant that the increases in realization exceeded the increases in wage costs and the decreases in realization were less than the wage cost declines.

Pre - N.R.A. History of Wages, Employment and Earnings: Data relating to the total wage bill of the industry are not entirely satisfactory. The only wage data which are available covering the entire industry are those of the census years, 1919 and 1929. The wage bill, including contract work, in 1919 was $685,457,034 and $576,689,699 in 1929. Thus, even in the prosperous year of 1929 the industry's wage bill was only 84 per cent of 1919 wage bill.

Turning to particular producing states for which annual wage bill data are available after 1929 (see Table IV), it is found that the wage bill declined in each succeeding year. For example, in Pennsylvania the wage bill fell from approximately $156,000,000 in 1929 (state report) to a low point of almost $57,000,000 - a decline of 63.5 per cent. The Ohio wage bill decreased from $23,224,000 in 1929 (state report) to a low of $9,492,000 in 1932 - a decline of 59 per cent. The Indiana wage bill during the period 1929 - 1933 declined 71.5 per cent or approximately $12,945,000. This decline would no doubt have been even greater had not three months of 1933 (N.R.A.) been included.

When it is remembered that these wage bills had been declining in the industry generally since 1923, it can readily be observed that the bituminous coal industry had indeed fallen to low levels immediately prior to the enactment of the N.I.R.A. Since the bituminous coal wage bill affects

TABLE IV

ANNUAL WAGE BILL FOR BITUMINOUS COAL INDUSTRY
IN SPECIFIED STATES, 1929-1934

States	1929 United States Census	1929 State Report	1930 State Report	1931 State Report	1932 State Report	1933 State Report	1934 State Report
Pennsylvania	$157,730,207	$155,995,200 1/	$130,029,000	$91,315,000	$57,082,500	$62,523,600	$97,966,854
Indiana	18,101,859	15,450,203 2/	13,400,204	10,713,104	7,026,016	5,257,303	8,980,920
Ohio	24,446,839	23,223,857 3/	20,405,126	16,691,396	9,491,590	14,335,394	21,488,102
Virginia	11,846,453	- 4/	-	8,255,462	5,093,503	-	-
Tennessee	5,999,623	6,019,381 5/	5,320,112	-	-	-	-

1/ Pennsylvania Annual Report on Productive Industries.
2/ Indiana Annual Report of the Division of Minerals and Mining.
3/ Ohio Division of Labor Statistics: Statistics of Mines and Quarries.
4/ State of Virginia - Annual Reports, Department of Labor and Industry: Industrial Statistics.
5/ Tennessee Annual Reports on Mineral Resources.

the purchasing power and well being of at least 450,000 mine workers and their families - perhaps some 2,000,000 individuals in all, its significance in the national picture of economic conditions is great. The wage bill reflects the economic situation existing in the coal industry. It is directly related to the industry's output which is dependent upon the number of days worked and so upon consumer demand, mine breakdown, holidays and labor disturbances.

The statistical series, showing indexes of employment and payrolls in the bituminous coal mining industry, established by the Bureau of Labor Statistics in 1929 is another indicator as to the decline suffered by the industry. This series (Table V) is based upon the reports made by a varying number of mines (about 1250) representing approximately 50 per cent of the total number of employees in the country. The base year 1929, equalling 100, may then be correlated with the Census report on wages in the industry for 1929 which was $576,689,699 (including contract work). Each year succeeding 1929 until the enactment of the NIRA shows a declining payroll. In 1930 the average payroll had decreased 18.9 per cent (compared with 1929) or approximately $108,994,000, and by 1931 the payroll was $245,000,000 less than that of 1929 - a decrease of 42.5 per cent. The low point in the annual payroll occurred in 1932, when the index for the year was 35.6 or $205,300,000 - a decline from 1929 of 64.2 or $371,388,000. The falling payroll continued into the first nine months of 1933, the average index for that period was 31.5. In August, 1933 the payroll index began to rise so that the average for the year was higher than that of 1932.

The declining wage bill in the industry is attested to by various individuals who were deeply interested in the economic and social problems of the bituminous coal industry. One central Pennsylvania operator stated that the basic day wage rate was reduced in 1927 from $7.50 to $6.00; on June 16, 1929, the rate was reduced to $5.00; on November 16, 1931, it was reduced to $4.00; and on December 6, 1932, it was further reduced to $3.44. (*) This operator went on to say:

> "We figured that was about as far as we could go. And that was really the highest wage paid by a group of representative operators in our district. Wage cutting had become so prevalent in the industry that it was difficult for anyone to know exactly what any other operator was paying. It had become a matter of individual slashing of prices and then the individual slashing of wages in order to meet the prices and to try to keep in business." (**)

(*) O'Neill, Charles, Testimony, Case of James Walter Carter v. Carter Coal Company, Supreme Court of the District of Columbia, Transcript of Record to Supreme Court of the United States, October Term, 1935, p. 346.

(**) Ibid, supra., p. 347.

TABLE V

INDEX OF PAYROLLS IN BITUMINOUS COAL MINING INDUSTRY, JANUARY, 1929 to NOVEMBER, 1935.

(12 Month Average, 1929 = 100)

Month	1929	1930	1931	1932	1933	1934	1935
January	106.1	101.4	73.3	47.0	36.1	51.3	59.6
February	116.6	102.1	68.3	47.0	37.2	54.6	66.1
March	108.6	86.4	65.2	46.8	30.7	58.9	67.5
April	89.2	81.7	58.6	33.9	26.6	51.4	45.0
May	91.9	77.5	54.4	30.7	26.9	54.4	49.1
June	90.0	75.6	52.4	27.3	29.2	55.1	64.7
July	85.6	68.9	50.4	24.4	33.6	49.7	35.9
August	92.8	71.1	50.6	26.4	43.3	50.4	45.8
September	98.6	74.9	53.6	30.2	44.1	51.4	60.1
October	106.8	79.4	56.2	37.8	44.1	57.6	69.8
November	106.0	79.1	54.6	38.0	50.7	58.3	65.5
December	108.2	77.7	52.3	37.7	50.8	57.0	
Average	100.0	81.3	57.5	35.6	37.8	54.2	57.2 1/

1/ Average for 11 months

Source: U. S. Bureau of Labor Statistics

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Another operator, from Ohio, stated that there was no stability whatever in the industry all during the period from April 1, 1927 until the fall of 1933; that conditions became progressively worse and wage trends were downward. (*) He said that the wages in Ohio, Northern West Virginia, and Western Pennsylvania went as low as between $2.00 and $3.00 per day and that miners did not average more than 3 days work per week, so that weekly earnings were approximately $6.00 to $10.00.

The Bituminous Coal Unit of the Research and Planning Division of NRA in December, 1933 sent out its from C (employment and earnings data) to the coal operators requesting, in addition to the usual data, that the wage rates paid for various occupations in May, 1933 (pre-Code) be noted thereon. In view of the fact that most of the coal producing areas were non-union immediately prior to the NIRA, the wage rates lacked uniformity even within a given field. The pre-Code wage rate data secured by the NRA are significant in showing the great diversity in wage rates and are also indicative of the low levels to which wage rates had fallen in the period immediately preceding the national industrial recovery program. Since compliance with the NRA request for May, 1933, wage rate data was voluntary; only those mining operations who kept good accounting systems or who were willing to disclose their pre-code wage information complied. As a result, the data shown represents the larger and better organized establishments and are, therefore, conservative and tend to understate the real depths to which wage rates had fallen.

These data are shown for three important occupations in bituminous coal mining - trackmen (basic underground skilled group), outside common labor, and loaders (men working on a tonnage basis). Table VI sets forth the number and per cent of mines in selected areas and the wage rates paid to trackmen in May, 1933. In those instances where a mine reported more than one rate for the same occupation, each rate was treated as a separate report. These wage rate data for six selected areas - Western Pennsylvania, Eastern Pennsylvania, Ohio, Northern West Virginia, Southern Subdivision No. 2, and Alabama - are shown in Chart II. It should be remembered that the Jacksonville scale (ending April 1, 1927) specified $7.50 per day for trackmen. The May, 1933 data for Western Pennsylvania show that 49 mines or 32 per cent of the usuable reports paid less than $2.50 per day, while only 18 mines or 12 per cent paid more than $3.50. In Eastern Pennsylvania, the showing is somewhat better since 74 mines or 81 per cent of the reports used paid $3.00 or more per day (no mines paid $4.00 or more). Turning to a southern coal producing area - Southern Subdivision No. 2 - it is found that 75 mines or 46 per cent of the used reports paid less than $2.50 per day (two mines paid less than $1.50 per day), while only 5 mines or 5.5 per cent paid $3.50 or more per day. The lowest wage level shown in Chart II is that of Alabama, where 16 mines or 61 per cent of the satisfactorily reported total paid less than $2.50 per day. More than half the mines in Alabama reported a 9 or 10 hour day for May, 1933, which means that trackmen receiving $2.50 or less a day were paid 28 cents or less an hour. Considering that the trackman's work requires a fair degree of skill and experience and involves some risk and that it is in the highest level of miners' jobs, the wage rates paid in May, 1933 were indeed low.

(*) Findlay, Harry O., Testimony, Carter Coal Case, op. cit. p. 384.

TABLE VI

NUMBER AND PERCENT OF MINES IN SELECTED AREAS IN WHICH TRACKMEN WERE PAID RATES FALLING IN SPECIFIED WAGE RATE INTERVALS 1/

MAY—1933

D-Ex. 33-A

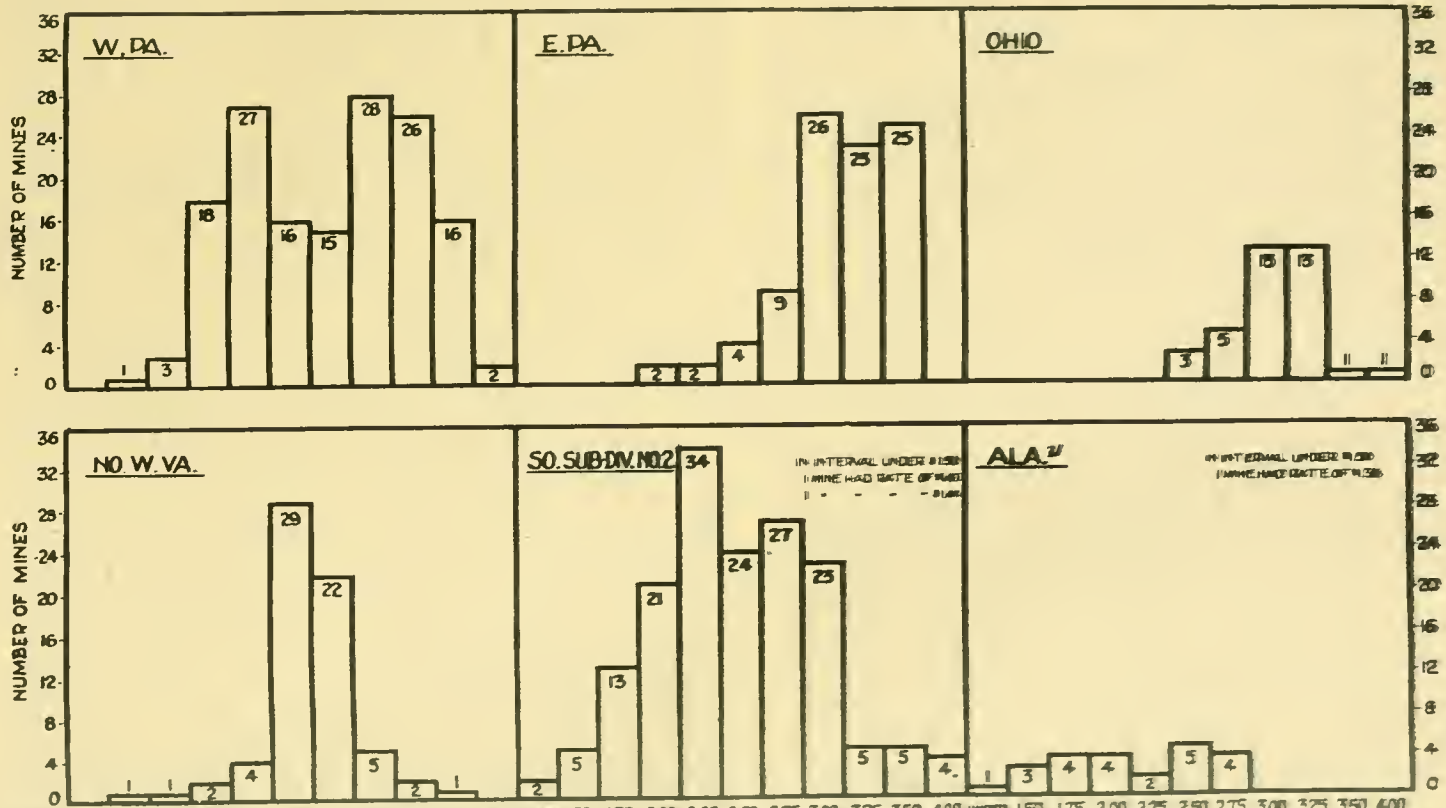
	Total Number Mines	Not Reported or Reporting Inadequately	Total Mines Included	Under $1.50	$1.50-1.74	$1.75-1.99	Rates—Dollars per Day 2.00-2.24	2.25-2.49	2.50-2.74	2.75-2.99	3.00-3.24	3.25-3.49	3.50-3.99	4.00-over	Total Across	
Division I																
Western Pennsylvania	173	22	151		1 (0.7)	3 (2.0)	18 (11.8)	27 (17.8)	16 (10.5)	15 (9.9)	28 (18.4)	24 (17.1)	16 (10.5)	2 (1.3)	152 (100.0)	1 mine reports more than 1 rate.
Eastern Pennsylvania	140	53	91				2 (2.2)	2 (2.2)	4 (4.4)	9 (9.9)	24 (26.4)	23 (26.3)	25 (27.4)		91 (100.0)	
Maryland & Upper Potomac	18	13	5				1 (20.0)	1 (20.0)	3 (60.0)						5 (100.0)	
Ohio	55	19	36						3 (8.3)	5 (13.9)	13 (36.1)	13 (36.1)	1 (2.8)	1 (2.8)	36 (100.0)	
Northern West Virginia	86	29	57		1 (1.5)	1 (1.5)	2 (3.0)	4 (6.0)	29 (43.3)	22 (32.8)	5 (7.4)	2 (3.0)	1 (1.5)		67 (100.0)	10 mines report more than 1 rate
Southern No. 1 (So. W. Va.)	139	126	13						1 (7.7)	6 (46.1)	5 (38.5)		1 (7.7)		13 (100.0)	
Southern No. 2	311	148	163	2 (1.2)	5 (3.1)	13 (8.0)	21 (12.9)	34 (20.8)	24 (14.7)	27 (16.6)	23 (14.1)	5 (3.1)	5 (3.1)	4 (2.4)	163 (100.0)	
Kanawha } W. Virginia	61	31	30		1 (3.3)	2 (6.7)		4 (13.3)	6 (20.0)	4 (13.4)	6 (20.0)	3 (10.0)	3 (10.0)	1 (3.3)	30 (100.0)	
Logan } W. Virginia	39	23	16					2 (12.5)	6 (37.5)	7 (43.8)	1 (6.2)				16 (100.0)	
Big Sandy-Elkhorn } Kentucky	45	14	31	1 (3.2)		2 (6.5)	5 (16.1)	1 (3.2)	6 (19.4)	7 (22.6)	5 (16.1)	1 (3.2)	1 (3.2)	2 (6.5)	31 (100.0)	
Hazard } Kentucky	37	16	21		1 (4.8)	4 (19.0)	4 (19.0)	4 (19.1)	2 (9.5)	3 (14.3)	2 (9.5)	1 (4.8)			21 (100.0)	
Harlan } Kentucky	25	15	10				4 (40.0)	2 (20.0)		2 (20.0)			1 (10.0)	1 (10.0)	10 (100.0)	
Virginia	32	14	18			2 (11.1)	2 (11.1)	6 (33.3)		2 (11.1)	6 (33.4)				18 (100.0)	
Williamson {So. W. Va. & No. Ky.	38	17	21		1 (4.8)	1 (4.8)	2 (9.5)	12 (57.1)	2 (9.5)	1 (4.8)	2 (9.5)				21 (100.0)	
Southern Appalachian {So. No. Ky. Tenn.	34	18	16	1 (6.3)	2 (12.5)	2 (12.5)	4 (25.0)	3 (18.7)	2 (12.5)	1 (6.2)	1 (6.3)				16 (100.0)	
Division III																
Alabama 2/	36	13	23	1 (4.3)	3 (13.1)	4 (17.4)	4 (17.4)	2 (8.7)	5 (21.7)	4 (17.4)					23 (100.0)	
So. Tennessee & Georgia	6	2	4					3 (75.0)		1 (25.0)					4 (100.0)	

1/ Reported by Operators to Bituminous Coal Unit NRA on Form "C"

2/ More than half the mines in Alabama were working a 9 or 10 hour day

Note: Figures in Parenthesis are Percentages

No. of Mines in Selected Areas in which Trackmen were paid Rates Falling in Specified Wage Rate Intervals May 1933 1/



DOLLARS PER DAY	UNDER 1.50	1.50 1.74	1.75 1.99	2.00 2.24	2.25 2.49	2.50 2.74	2.75 2.99	3.00 3.24	3.25 3.49	3.50 3.99	4.00 OVER
CENTS PER HOUR	0 .187	.188 .218	.219 .249	.250 .280	.281 .311	.312 .343	.344 .374	.375 .405	.406 .436	.437 .499	.500 OVER

1/ Reported by Operators to Bituminous Coal Unit, N.R.A., on Form "C"
NOTE Certain Mines Reported More Than One Rate, and these were counted as Separate Reports.
2/ More than half the Mines were Working 9 to 10 Hour Days

Prepared by Bituminous Coal Unit Division of Review N.R.A.
Under Direction of F.E. Bernquist.

The wage rates paid to outside common labor as reported for May, 1933 are shown in Table VII and a graphic presentation for the six selected areas is made on Chart III. In Western Pennsylvania, for example, out of 104 reports used, 73 or 61 per cent, showed the outside common labor rate as less than $3.50 per day, while only 3 reports showed a rate of $3.50 or more per day. The Eastern Pennsylvania reports for 60 mines showed 29 mines or 47.5 per cent paying less than $2.50 per day and only 2 mines paying $3.35 or more per day. In Northern West Virginia out of a total of 35 reports, 21 or 60 per cent showed a daily average rate of less than $2.50. Although the outside common labor rate in these northern producing areas seem low, the wage rate level in Southern Subdivision No. 2 was even lower. In that area out of a total of 90 mines, whose reports were used, 73 mines, or 81 percent, paid less than $2.25 per day; 28 of these mines paid less than $2.00 per day. Seven mines in Southern Subdivision No.2 reported a rate of less than $1.50 per day and three of those paid $1.35 or less a day---- less than 16 cents per hour based on an 8-hour day. Again, these wage rates may be considered as conservative indicators and tend to understate the grave situation which had developed. Moreover, it should be remembered that wage rates and not earning are being treated here. A mine worker employed in a mine which operated only 2 or 3 days a week could receive only $6.00 to $8.00 a week from which amount deductions for house rent, fuel, doctor, etc. would have to be made.

The tonnage rates paid to loaders in May, 1933 as reported to the N.R.A. by the operators are also indicative of the depth to which wages had fallen by that time. (Table VIII - Chart IV) The rates paid to loaders, even under contract with a union, varies from area to area since it is a rate per ton and is dependent upon size of seam, working condition, etc. In general it may be said, however, that the wage rate for union loaders during the Jacksonville Agreement period (1924 - 1927)was between 75 and 80 cents per ton. In contrast to this rate, it is found that Western Pennsylvania did not report a rate in excess of 50 cents per ton for May, 1933. As a matter of fact, out of 162 rates reported for this area, 93 or 57 per cent were less than 35 cents per ton -- 9 rates being less than 20 cents per ton. To the usual reader a wage rate per ton is meaningless unless some knowledge exists as to the out put per man per day for a particular occupational group. The output per man per day reflects the thickness or thinness of seam, degree of mechanization, etc. and, therefore, varies not only as between districts,but even between individual mines. However, in order to arrive at a rough approximation of the Western Pennsylvania loaders' earnings per day in May, 1933, assume an output per man per day of 7 tons, (*) then 57 per cent of the reported rates in that area would represent an earning of $2.45 or less per day. Since there is no information as to the number of men who were paid a specified wage rate, one must be careful to avoid the error of assuming that a majority of the rates means a majority of the men.

(*) Coal in 1933-33, U. S. Bureau of Mines reports 5.23 tons as output per man per day for underground men in Pennsylvania. The above liberal assumption of 7 tons per day is made so that the estimated earning will not be understated.

TABLE VII

C. Ex. 34

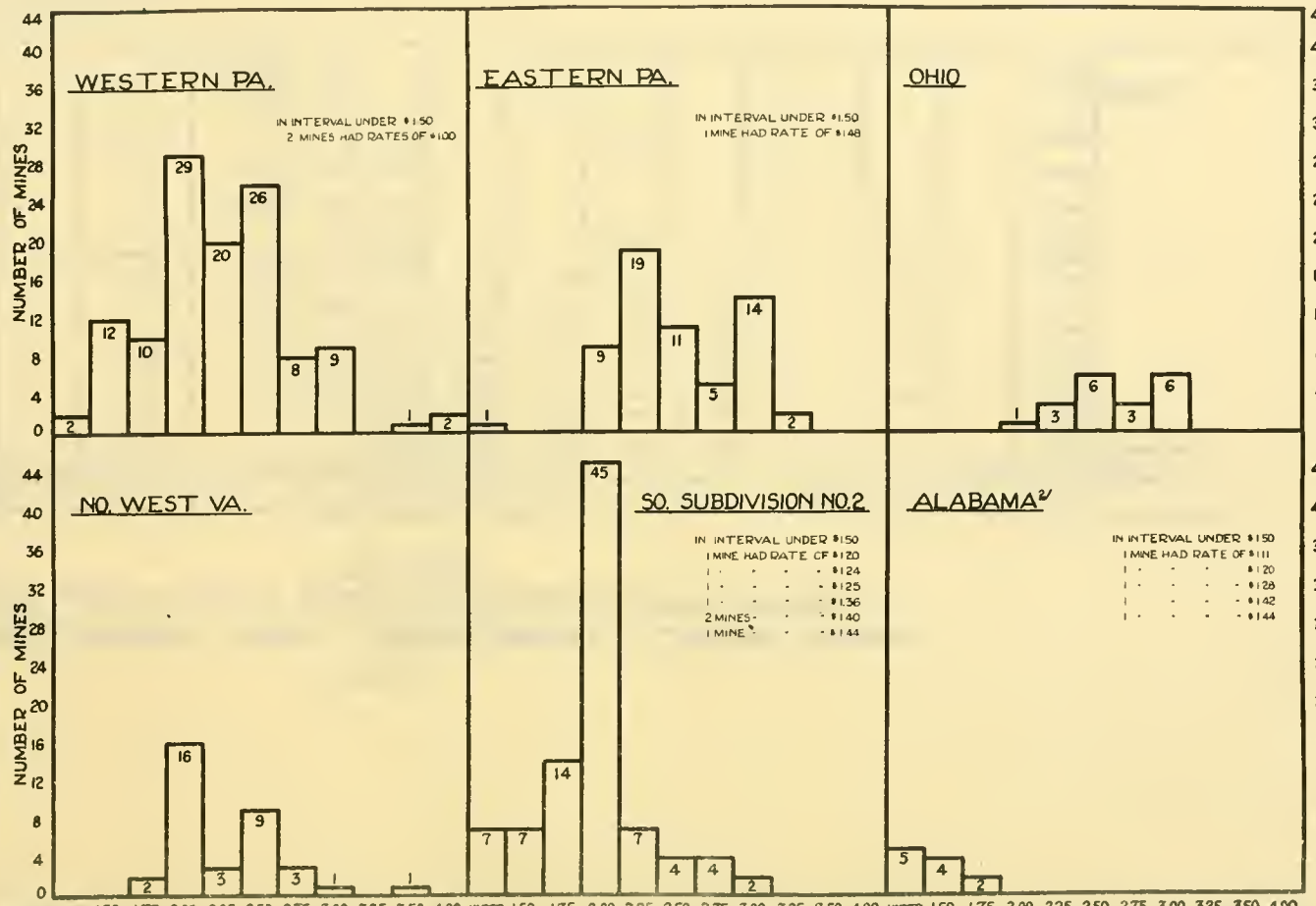
NUMBER AND PERCENT OF MINES IN SELECTED AREAS IN WHICH OUTSIDE COMMON LABOR WAS PAID RATES FALLING IN SPECIFIED WAGE RATE INTERVALS 1/
MAY 1933

	Total Number of Mines	Mines not Reporting or Reporting Intermittently	Total Number of Employees	Rates in Dollars per Day: Under $1.50	$1.50-1.74	1.75-1.99	2.00-2.24	2.25-2.49	2.50-2.74	2.75-2.99	3.00-3.24	3.25-3.49	3.50-3.99	4.00 over	Total Reports	
Division I																
Western Pennsylvania	123	19	104	2 (1.7)	12 (10.1)	10 (8.4)	39 (34.4)	20 (16.8)	26 (21.8)	8 (6.7)	9 (7.6)	.	1 (0.8)	2 (1.7)	119 (100.0)	4 mines report more than 1 rate
Eastern Pennsylvania	99	39	60	1 (1.6)			9 (14.8)	19 (31.1)	11 (18.0)	5 (8.2)	14 (23.0)	2 (3.3)			61 (100.0)	1 mine between 2 rates
Maryland & Upper Potomac	15	9	6				2 (33.3)	3 (50.0)	1 (16.7)						6 (100.0)	
Ohio	31	12	19				1 (5.2)	3 (15.8)	6 (31.6)	3 (15.8)	6 (31.6)				19 (100.0)	
Northern West Virginia	45	10	35			2 (6.1)	16 (46.7)	3 (8.6)	9 (25.7)	3 (8.6)	1 (2.8)		1 (2.9)		35 (100.0)	
Southern No 1	94	87	7				6 (85.7)	1 (14.3)							7 (100.0)	
Southern No 2	136	96	90	7 (7.8)	7 (7.8)	14 (15.6)	46 (50.0)	7 (7.8)	4 (4.4)	4 (4.4)	2 (2.2)				90 (100.0)	
Kanawha, W. Virginia	40	21	19		2 (10.5)		7 (36.8)	5 (26.3)	3 (15.8)	1 (5.3)	1 (5.3)				19 (100.0)	
Logan	51	20	11			2 (18.2)	8 (72.7)	1 (9.1)							11 (100.0)	
Big Sandy-Elkhorn, Kentucky	29	7	22	3 (13.6)	1 (4.5)	6 (27.3)	11 (50.0)		1 (4.6)						22 (100.0)	
Hazard, Kentucky	20	12	8	2 (25.0)	1 (12.5)		4 (50.0)	1 (12.5)							8 (100.0)	
Harlan, Kentucky	18	13	5	1 (20.0)			2 (40.0)			1 (20.0)	1 (20.0)				5 (100.0)	
Virginia	14	5	9		2 (22.2)	1 (11.1)	6 (66.7)								9 (100.0)	
Williamson, Southern W. Va. & Ky.	18	7	11		1 (9.1)	5 (45.4)	5 (45.5)								11 (100.0)	
Southern Appalachians, So. Kentucky, No. Tennessee	16	11	5	1 (20.0)			2 (40.0)			2 (40.0)					5 (100.0)	
Division III																
Alabama	17	7	10	5 (45.4)	4 (36.4)	2 (18.2)									11 (100.0)	1 mine reports more than 1 rate
So. Tennessee and Georgia	3	1	2		2 (100.0)										2 (100.0)	

1/ Reported by operators to Bituminous Coal Unit, NRA on Form "C"
2/ More than half the mines in Alabama were working a 9 or 10 hour day
Note: Figures in parenthesis are percentages

D.Ex. 34a

Number of Mines-Selected Areas in which Outside Common Labor was paid Rates Falling in Specified Wage Rate Intervals — May 1933 1/



DOLLARS PER DAY	UNDER 1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50	4.00 AND OVER
	1.50	1.74	1.99	2.24	2.49	2.74	2.99	3.24	3.49	3.99
CENTS PER HOUR	0 .187	.188 .218	.219 .249	.250 .280	.281 .311	.312 .343	.344 .374	.375 .405	.406 .436	.437 .499	.500 AND OVER

DOLLARS PER DAY	UNDER 1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50	4.00 AND OVER
	1.50	1.74	1.99	2.24	2.49	2.74	2.99	3.24	3.49	3.99
CENTS PER HOUR	0 .187	.188 .218	.219 .249	.250 .280	.281 .311	.312 .343	.344 .374	.375 .405	.406 .436	.437 .499	.500 AND OVER

1/ Reported by Operators to Bituminous Coal Unit N.R.A. on Form "C"
NOTE: Certain Mines Reported More Than One Rate, and these were counted as Separate Reports
2/ More than half the Mines were working a 9 or 10 Hour day.

Prepared by Bituminous Coal Unit, Division of Review, N.R.A.,
Under Direction of F.E. Berquist

In Eastern Pennsylvania the reported tonnage rates for loaders in May, 1933 were much higher. Out of a total of 74 reported rates, 65 or 88 per cent were in excess of 35 cents per ton. No rate for less than 25 cents per ton was shown. Northern West Virginia reported 43 rates or 81 per cent of the total as being less than 25 cents per ton. A weighted average of the earnings per day for machine loaders in Northern West Virginia, based upon the May, 1933 rates, was $2.58. (*) In view of the fact that 81 per cent of the reported rates were less than 25 cents per ton, it would follow that more men were employed at the higher rates or that the out put per man per day was in excess of 10 tons in order to earn $2.58 per day.

Southern Sub-Division No. 2 reported 162 rates for loaders for May, 1933, of which 117 or 72 per cent were less than 30 cents per ton. On the other hand, 14 rates or approximately 9 per cent paid 35 cents or more per ton. It will be noted that many southern coal producing areas (Table VIII) - Kanawha and Logan Counties, West Virginia; Hazard, Kentucky; and Williamson, Southern West Virginia and Northern Kentucky reported a high percentage of their loader rates as being less than 20 cents per ton.

The foregoing material, indicating the declining wage rates and wage bill in the bituminous coal industry, is very significant in its effect upon a widespread labor population. (See Chart V.) Since bituminous coal mining is carried on in some twenty-six widely scattered states, demoralization of mine labor - aside from the effects upon operators and consumers - has a tremendous influence on the economic well-being of these areas. In considerable portions of these states more than 60 per cent of the productive industrial workers are employed in bituminous coal mining. Serious reductions in payrolls mean curtailed purchasing power and affect the whole national economy. The bituminous coal industry for a decade had been growing increasingly worse in terms of markets, prices, wage bill and employment. Indeed, it may be said to have contributed more than its share to the deeply depressed economic conditions which existed in the early months of 1933.

Employment in bituminous coal mining in terms of seasonal and cyclical variations has already been discussed. (**) In this section the employment situation will be treated according to the trend of the last decade in order to provide a background for the situation which existed immediately preceding the adoption of the Bituminous Coal Code. The shrinkage in employment after 1929 in the bituminous coal industry was neither peculiar to itself nor more drastic than occurred in other industries. But unlike most other industries, the bituminous coal industry did not have its peak employment in 1929. Unemployment in coal mining had been growing since 1923.

(*) Statistical Compilation, Norther West Virginia Subdivisional Code Authority, Fairmont, West Virginia, April 1, 1934, p. 109.

(**) See Chapter IV section on Seasonal and Cyclical Fluctuations in Employment.

TABLE VIII

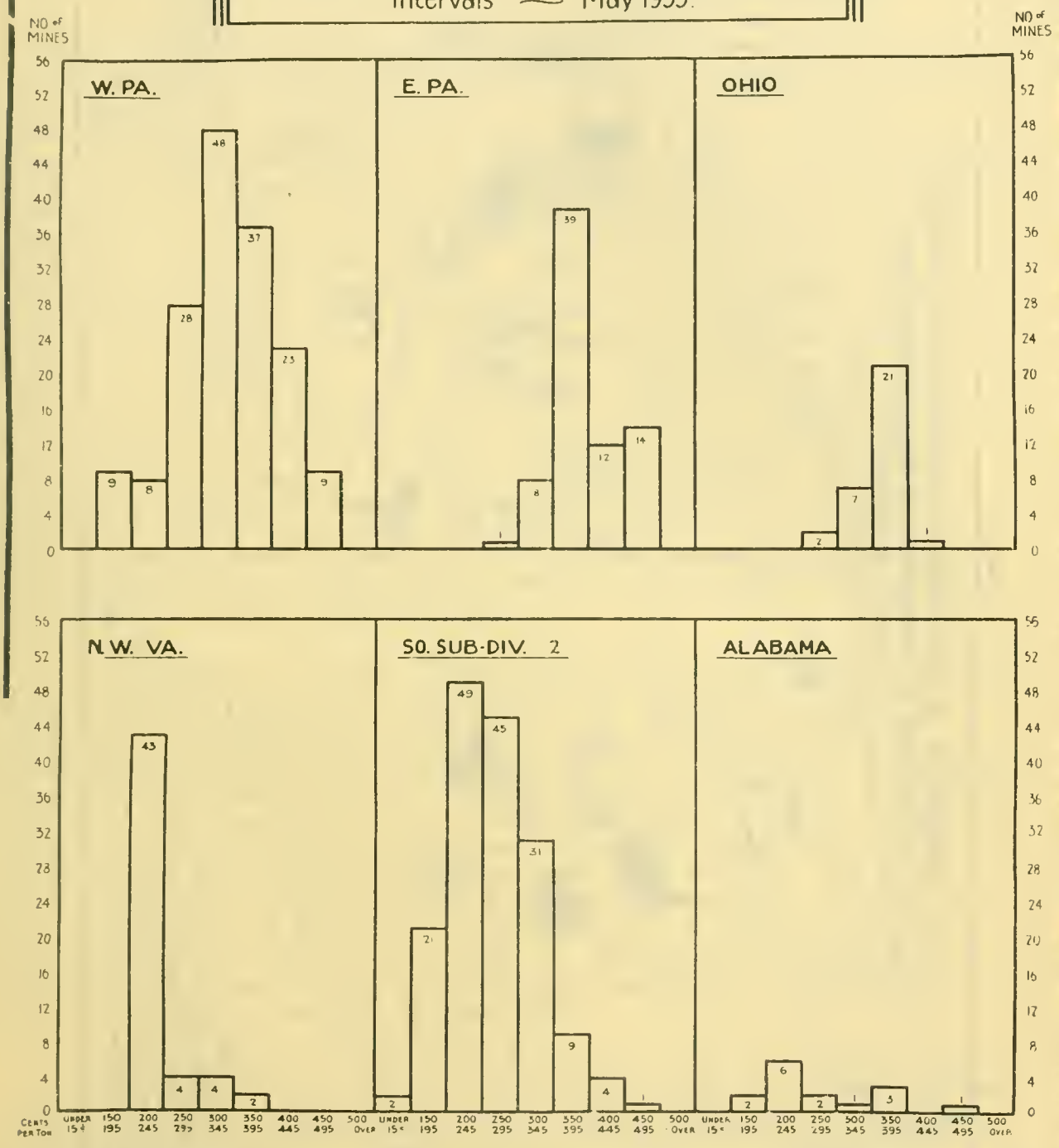
NUMBER AND PERCENT OF MINES IN SELECTED AREAS IN WHICH LOADERS WERE PAID RATES FALLING IN SPECIFIED WAGE RATE INTERVALS 1/
MAY 1933

	Total Number Mines	Not Reporting or Reporting Inaccurately	Total Number Included	Under 15¢	15-19½¢	Rates in Cents Per Ton 20-24½¢	25-29½¢	30-34½¢	35-39½¢	40-44½¢	45-49½¢	Total Across	Mines Reporting More than 1 Rate
Division I													
Western Pennsylvania	165	46	119		9 (5.6)	8 (4.9)	28 (17.5)	48 (29.6)	37 (22.8)	23 (14.2)	9 (5.6)	162 (100.0)	19
Eastern Pennsylvania	118	45	73				1 (1.4)	8 (10.8)	39 (52.7)	12 (16.2)	14 (18.9)	74 (100.0)	1
Maryland & Upper Potomac	6	3	3				2 (66.7)	1 (33.3)				3 (100.0)	
Ohio	56	25	31				2 (6.5)	7 (22.6)	21 (67.7)	1 (3.2)		31 (100.0)	
Northern West Virginia	85	32	53			43 (81.1)	4 (7.6)	4 (7.5)	2 (3.8)			53 (100.0)	
Southern No 1 (So WVa)	133	127	6			1 (16.7)	4 (66.6)		1 (16.7)			6 (100.0)	
Southern No 2	292	153	139	2 (1.2)	21 (13.0)	49 (30.2)	45 (27.8)	31 (19.1)	9 (5.6)	4 (2.5)	1 (0.6)	162 (100.0)	18
Kanawha } West Virginia	55	32	23		1 (3.6)	2 (7.1)	10 (35.7)	11 (39.3)	4 (14.3)			28 (100.0)	5
Logan }	36	27	9		3 (33.3)	6 (66.7)						9 (100.0)	
Big Sandy-Elkhorn } Kentucky	43	14	29			7 (23.3)	10 (33.3)	9 (30.0)	2 (6.7)	2 (6.7)		30 (100.0)	1
Hazard } Kentucky	36	16	20	1 (3.7)	7 (25.9)	12 (44.5)	7 (25.9)					27 (100.0)	6
Harlan } Kentucky	27	16	11		1 (6.7)	5 (33.3)	3 (20.0)	4 (26.7)		2 (13.3)		15 (100.0)	2
Virginia	30	16	14			8 (47.0)	5 (29.4)	1 (5.9)	2 (11.8)		1 (5.9)	17 (100.0)	1
Williamson, So WVa & No Ky	37	18	19	1 (5.0)	9 (45.0)	6 (30.0)	3 (15.0)	1 (5.0)				20 (100.0)	1
Southern Appalachian, So. Ky & No. Tenn.	28	14	14			3 (18.8)	7 (43.7)	5 (31.3)	1 (6.2)			16 (100.0)	2
Division III													
Alabama	25	11	14		2 (13.3)	6 (40.0)	2 (13.3)	1 (6.7)	3 (20.0)		1 (6.7)	15 (100.0)	1
So. Tennessee & Georgia	2	1	1							1 (100.0)		1 (100.0)	

1/ Reported by operators to Bituminous Coal Unit, N.R.A. on Form "C".

Note: Figures in parenthesis are percentages.

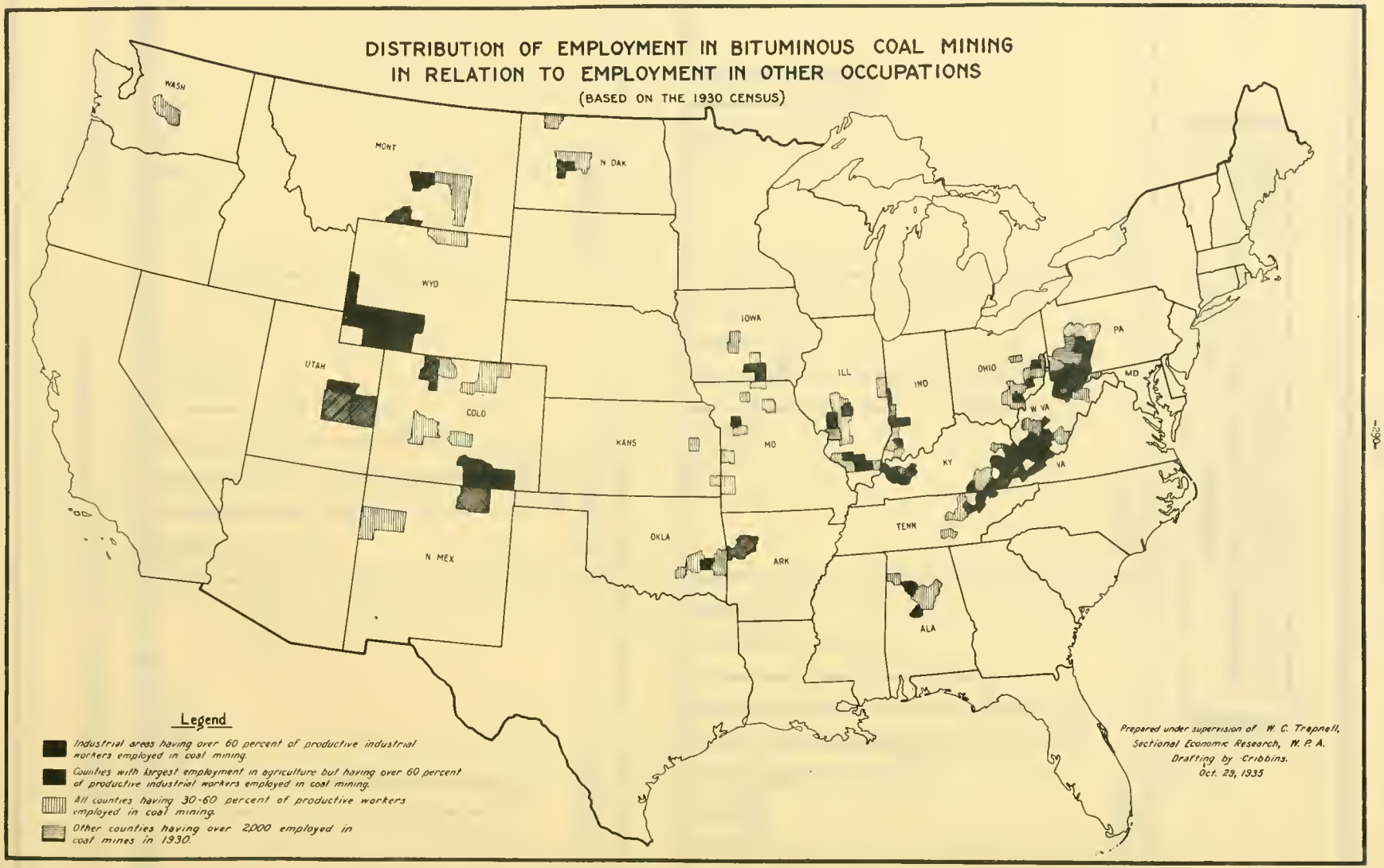
Number of Mines in Selected Areas in which Loaders were paid Rates Falling in Specified Wage Rate Intervals — May 1933.[1]



[1] Reported by Operators to Bituminous Coal Unit, N.R.A. on Form "C"
NOTE Certain Mines Reported More than One Rate, and these were Counted as Separate Reports

PREPARED BY Bituminous Coal Unit, Division of Review, N.R.A., under the direction of P.E. Berquist

CHART V


DISTRIBUTION OF EMPLOYMENT IN BITUMINOUS COAL MINING
IN RELATION TO EMPLOYMENT IN OTHER OCCUPATIONS
(BASED ON THE 1930 CENSUS)
WASH
MONT
N DAK
WYO
IOWA
PA
UTAH
ILL
IND
OHIO
MD
COLO
W VA
KANS
MO
KY
VA
TENN
OKLA
ARK
N MEX
ALA
Legend
Industrial areas having over 60 percent of productive industrial workers employed in coal mining.
Counties with largest employment in agriculture but having over 60 percent of productive industrial workers employed in coal mining.
All counties having 30-60 percent of productive workers employed in coal mining.
Other counties having over 2000 employed in coal mines in 1930.
Prepared under supervision of W. C. Trapnell, Sectional Economic Research, W. P. A.
Drafting by Cribbins.
Oct. 23, 1935

It is necessary, therefore, in discussing the unemployment problem in this industry to refer back to the events of more than a decade ago. Moreover, while declining employment is a serious problem wherever it is found, in bituminous coal mining the problem is more grave than elsewhere. The coal miner lives in a decidedly restricted labor market. When the miner is thrown on a declining labor market alternative occupations affording employment are lacking and his mobility is so limited by his impecunious state as to shut him out from other areas where work may be available.

The data set forth in Table IX and Chart VI indicate clearly the trend of employment in the bituminous coal industry during the ten year period preceding the advent of the N.R.A. It will be noted that the employment peak was reached in 1923 when the total number of employees in the industry approximated 705,000. At the same time the number of commercial mines in operation totaled 9,331 - the highest figure in the history of the industry. The remarkable growth in mining operations and therefore of capacity arising out of the war period is evident when it is seen that only 7 years before this date the total number of commercial mines was 5,726 or 3,505 less than the number in 1923. While these operations afforded increased employment, they were outgrowths of a temporary war-time demand and of unusually favorable market prices because of transportation shortage and labor disputes. The tremendous increase in excess capacity in the face of a post-war recession in demand inevitably brought liquidation of mining operations. The closing down of mines was accompanied by decreasing employment. In other cases where mines continued to operate, the number of days worked in the year was materially reduced. In still other instances operators desperately seeking to reduce costs introduced mechanical cutters, loaders, etc. and thus displaced numerous employees. In the one year between 1923 and 1924 the number of mines in operation declined 1,745, or approximately 19 per cent, while the number of employees were reduced by 85,000, or 12 per cent.

The decrease in the number of operating commercial mines and in employment continued steadily in each year after 1923 (except in 1926 when the British strike influenced prices sufficiently to re-open a few mines and improve employment slightly down to 1933. These shut down mines representing potential tonnage and increased excess capacity continued to threaten the depressed market. Only the passage of years with increasing disrepair, flooding, roof cave-ins, etc. could remove these mines from the picture. Thus in 1929 when industry generally was booming and people were talking of permanent prosperity, the bituminous coal mining industry since 1923 had closed down some 3,274 mines or 35 per cent of the total operating in that year. Employment in the same period decreased in excess of 200,000 or approximately 29 per cent. The fact that employment did not decrease as greatly as the number of mines indicates that the larger mines employing great numbers of men continued in operation.

The downward trend in employment and in the number of commercial mines in operation continued until the summer months of 1933, when in anticipation of improved economic conditions under the National Industrial Recovery Act, employment increased and a number of mines re-opened. By 1932, however, employment in the industry stood at 406,000 or 300,000 less than were employed in 1923.

TABLE IX

TRENDS OF EMPLOYMENT, WORKING TIME, WAGE RATES AND LABOR PRODUCTIVITY AT BITUMINOUS COAL MINES IN THE UNITED STATES, 1899-1934

(Columns (1) to (6) from annual reports of the U. S. Bureau of Mines; Columns (7) and (8) computed from reports of the U. S. Bureau of Labor Statistics; Column (9) from Report of the U. S. Coal Commission and NRA Code)

Year	(1) Number of men employed (thousands)	(2) Average number of days: Worked	(3) Idle: On account of labor disputes[a]	(4) Idle: Other causes[b]	(5) Net tons per man per day	(6) Number of commercial mines in operation	(7) Average daily earnings all daymen covered by Bureau of Labor Statistics, sample surveys: West Virginia	(8) Tennessee	(9) Illinois scale inside daymen (trackmen)
1899	271	234	5	66	3.05	4,000	(c)	(c)	$1.90
1900	304	234	5	69	2.98	(c)	(c)	(c)	2.28
1901	340	225	2	81	2.94	(c)	(c)	(c)	2.28
1902	370	230	7	71	3.06	(c)	(c)	(c)	2.28
1903	416	225	3	80	3.02	(c)	(c)	(c)	2.56
1904	438	202	8	98	3.15	(c)	(c)	(c)	2.42
1905	461	211	2	95	3.24	5,060	(c)	(c)	2.42
1906	478	213	23	67	3.36	(c)	(c)	(c)	2.56
1907	513	234	1	73	3.29	(c)	(c)	(c)	2.56
1908	516	193	11	104	3.34	(c)	(c)	(c)	2.56
1909	543	209	1	98	(c)	5,775	(c)	(c)	2.56
1910	556	217	35	56	3.46	5,818	(c)	(c)	2.70
1911	550	211	2	95	3.50	5,887	(c)	(c)	2.70
1912	549	223	10	75	3.68	5,747	(c)	(c)	2.85
1913	572	232	5	71	3.61	5,776	(c)	(c)	2.85
1914	584	195	19	94	3.71	5,592	(c)	(c)	2.85
1915	557	203	4	101	3.91	5,502	(c)	(c)	2.85
1916	561	230	4	74	3.90	5,726	(c)	(c)	3.00
1917	603	243	4	61	3.77	6,939	(c)	(c)	3.60 Apr., 5.00 Oct.
1918	615	249	1	58	3.78	8,319	(c)	(c)	5.00
1919	622	195	25	88	3.84	8,994	e/ $4.09	e/ $3.21	5.70 Nov.
1920	640	220	6	82	4.00	8,921	(c)	(c)	6.00 Apr., 7.50 Aug.
1921	664	149	3	156	4.20	8,033	f/ $5.87	(c)	7.50
1922	683	142	78	83	4.28	9,299		(c)	7.50
1923	705	179	2	127	4.47	9,331	(c)	(c)	7.50
1924	620	171	7	130	4.56	7,586	g/ $4.93	g/ $3.55	7.50
1925	583	195	2	111	4.52	7,144	(c)	(c)	7.50
1926	594	215	1	92	4.50	7,177	h/ $4.91	h/ $3.35	7.50
1927	594	191	45	72	4.55	7,011			7.50
1928	522	203	8	97	4.73	6,450	(c)	(c)	6.10 Sept.
1929	503	219	(d)	89	4.85	6,057	i/ $4.76	i/ $3.28	6.10
1930	493	187	2	119	5.06	5,891	(c)	(c)	6.10
1931	450	160	3	145	5.30	5,642	j/ $4.57	j/ $3.19	6.10
1932	406	146	19	143	5.22	5,427	(c)	(c)	5.00 Aug.
1933	419	167	9	132	4.78	5,555	k/ $3.25	k/ $2.66	5.00
1934	l/ 450	---	---	---	---	---	---	---	5.00

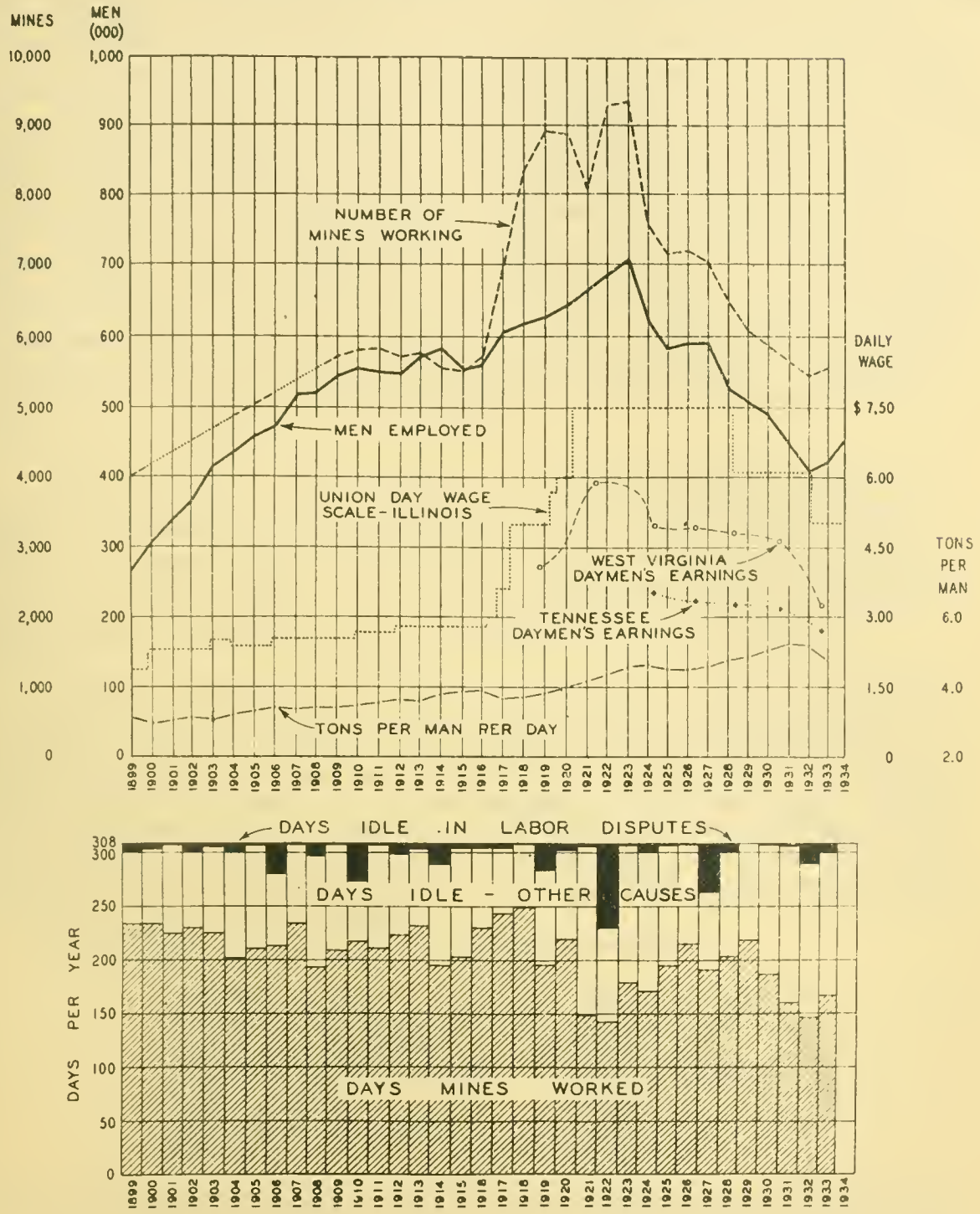
a/ Includes strikes, suspensions, and lockouts.
b/ Includes no market car shortage, mine break-downs, and all other causes of lost time except labor disputes.
c/ No data.
d/ Less than ½ day.
e/ Surveys made between January and May.
f/ Surveys made between October 1, 1921 and February 15, 1922.
g/ Surveys made between October and December.
h/ Surveys made between November 26, 1926 and March 22, 1927.
i/ Surveys made in first quarter.
j/ Surveys made in first quarter.
k/ Surveys made in February
l/ Estimated.

Prepared by: F. G. Tryon and W. H. Young,
Coal Economics Division,
U. S. Bureau of Mines.
October 27, 1935.

CHART VI

TRENDS OF EMPLOYMENT, WORKING TIME, WAGE RATES AND LABOR PRODUCTIVITY, 1899-1934

D.Ex.



SOURCES: U. S. Bureau of Mines
Bureau of Labor Statistics

9837

By F. G. Tryon and H. H. Young,
Coal Economics Division,
U. S. Bureau of Mines,
October 25, 1935.

Drafting by R. L. Anderson.

Throughout the period under discussion, it will be noted that the output per man per day steadily increased. Whereas in 1922 this output amounted to 4.28 tons per day, by the end of 1931 it amounted to 5.30 tons per day. The increasing output per man per day evidences new techniques, greater mechanization and operation of mines having more favorable natural working conditions. Thus, the development of strip mining in Indiana and Illinois meant greater output per man concurrently with lower labor costs and reduced employment. Again, the electrification of the mines, modernization of mine lay-outs, mechanization of cutting and loading -- all seeking to reduce production costs -- also spelled unemployment for large numbers of men. Those individuals, who were fortunate enough to retain their jobs, found that their working time was seriously reduced. Part time employment meant deflated pay envelopes. The average number of days worked per year in the decade, 1913 - 1922, was 205.8; in the following decade, 1923 - 1932, this average had declined to 186.6. The lower portion of Chart VI shows "days idle in labor disputes" to have been of no great consequence since 1923. But "days idle - other causes" (primarily lack of markets) became increasingly significant in that period. Even the prosperous year 1929 afforded only 219 days of work - the most that bituminous coal mining had had since 1920.

The situation in the bituminous coal fields had become so critical by 1931 that President Hoover requested the American Friends Service Committee to undertake a child feeding program in the bituminous coal areas. The project began with $225,000 and more money was later raised by private subscription. Child feeding programs were conducted at 640 schools scattered through 40 counties in the states of Pennsylvania, West Virginia, Kentucky, Maryland, Tennessee and Illinois. (*)

The only continuous and comparable data showing earnings of bituminous coal miners over a period of years are those collected by the U. S. Bureau of Labor Statistics. This agency in 1919 instituted periodic surveys regarding the wages and hours of labor in bituminous coal mining. These studies, in general, have been carried on every two years. They provide employee data for bituminous coal mining in eleven States - Alabama, Colorado, Illinois, Indiana, Kansas, Kentucky, Ohio, Pennsylvania, Tennessee, Virginia and West Virginia. These States produce more than 90 per cent of the national tonnage.

Studies have been made for the following periods:

January to May	-1919
October 1 to February 15	-1921 - 1922
October to December	-1924
November 26 to March 27	-1926 - 1927
First Quarter	-1929
First Quarter	-1931
February	-1933

(*) Morris, Homer, Testimony, Transcript of Record, James Walter Carter v. Carter Coal Company - Supreme Court of the United States, October Term, 1935, p. 503.

In each year the data were collected for each employee in each occupation in the industry, showing the number of starts or calendar days on which he worked, the number of hours worked, and the amount earned in a representative half-monthly pay period. The wage data, except for a few companies which made transcripts of their records to the bureau, were taken directly from the payrolls, clock cards and other records of the companies studied.

The number of mines for which data were secured varied from one survey to another. The data covered 200 mines in 1922, 599 in 1924, 566 in 1926, 535 in 1929, 469 in 1931, and 444 in 1933. The recent surveys covered approximately one-third of the total number of employees in the industry. In general the surveys included many larger mines and numberous captive mines. Since the composition of the sample favors the larger well organized mining operations as well as those having industrial affiliations, it is undoubtedly true that the number of starts in the pay period and the regularity of operation are greater. As a result the average earnings indicated are perhaps somewhat higher than might otherwise be the case. Likewise, the data for the unorganized areas being based on the records of the better companies are apt to present higher average earnings. The average earnings data reported by the Bureau of Labor Statistics are net earnings after deductions for occupational expenses (powder, dynamite, tool sharpening, blacksmithing, etc.) have been made.

Although the hours and wage studies present data for each individual occupational classification, for purposes of treatment here the occupations will be set up into two groups. One group called "tonnage men" is made up primarily of miners (gang miners, hand or pick miners, machine miners (cutters), and machine miners((cutters) helpers) and loaders (contract, hand, and machine). These employees work underground or inside the mine and are generally paid tonnage rates. The other group called "day men" includes all employees working either inside or outside (surface) of the mine who are paid time or day rates; that is, rates per hour, day, or week. The data for the day men are generally more accurate than data for the tonnage men because the time and earnings of the former are entered on the payroll records.

The average earnings of both tonnage and day men, in general, declined continuously since 1922. It is true that the half month earnings of tonnage men in 1926 showed a slight rise, but this increase was temporary, reflecting the influence of the British strike and increased demand for coal with accompanying increased working time. The average hourly earnings of tonnage men based on time at the face, including time for lunch were 91.5 cents in 1922, 84.3 cents in 1924, 81.7 cents in 1926, and 68.7 cents in 1929. The decrease between 1922 and 1929 was 22.8 cents per hour or 24.9 per cent. Average earnings per start or day for this group were $7.03 in 1922, $6.60 in 1924, $6.46 in 1926, and $5.50 in 1929. Daily earnings of tonnage men declined between 1922 and 1929 to the extent of $1.53 or 21.8 per cent. Earnings in the half month fell from $62.30 in 1922 to $49.85 in 1929 - a decrease of $12.45 or 20 per cent.

For the day men group, average hourly earnings between 1922 and 1929 declined 14.8 cents or approximately 20 per cent. Daily earnings for this group during the same period decreased $1.58 or 21 per cent. The slight difference in the percentage decline between hourly and daily earnings is explained by the reduction in the average hours worked per day.

Average Earnings of Tonnage Men and Day Men in Specified Years 1/

	Tonnage Men			Day Men		
Year	Per Hour2/	Per Start (Day)	In Half Month	Per Hour	Per Start (Day)	In Half Month
1922	$ 0.915	$7.03	$ 62.30	$ 0.753	$ 6.55	$66.17
1924	.843	6.60	54.44	.696	5.92	57.81
1926	.817	6.46	61.61	.664	5.70	60.87
1929	.687	5.50	49.85	.605	5.17	52.57
1931	.599	4.82	33.82	.595	5.02	41.58
1933	.395	3.18	22.59	.439	3.68	29.46

1/ U. S. Bureau of Labor Statistics
2/ Time at the face, including lunch

Considering that most industries in 1929 had a record for the preceding years of increasing average earnings, the bituminous coal mining industry's record was indeed bad. Despite the low wage level existing in the coal industry in 1929, earnings continued to decline in the following years with the influence of the business depression. The earnings received by tonnage men and day men in 1931 and 1933 are shown in the above inset. In the last survey made by the Bureau of Labor Statistics, February, 1933, it was found that the amount earned per hour by the wage earners in the industry in that year was 41 cents. (*) The average hourly earnings were 85.3 cents in 1922, 78.8 cents in 1924, 76.3 cents in 1926, and 65.9 cents in 1929. The decrease between 1922 and 1933 was 52 per cent and between 1929 and 1933 was 38 per cent.

Because an average of earnings for all wage earners in the industry tends to be misleading in that it conceals variations existing between particular occupations and producing areas, more specific information is needed. Data giving somewhat more detailed information regarding earnings for all wage earners, tonnage men, and day men in the States east of the Mississippi River as reported in the surveys of the Bureau of Labor Statistics are set forth in Table X. The explanatory notes at the top of the table are essential to a proper understanding of the qualifications attaching to the data set forth.

A comparison of the daily earnings of day men discloses wide differences in the various states. For example between 1921 - 22 and 1927 daily earnings for this group of men in Illinois, Indiana, and Ohio were in excess of $7.00, whereas in Pennsylvania, Kentucky and West Virginia these earnings ranged from something less than $5.50 to $6.50, and in Virginia, Tennessee and Alabama the earnings were from $3.50 to $4.50. The explanation for the variation in earnings levels for each group of states during the period discussed above lies primarily in the degree of unionization. Thus, Illinois, Indiana, and Ohio were strongly organized areas operating under union contracts. The group of states comprising Pennsylvania, Kentucky, and West Virginia were only partially organized and for varying periods of time so that although the earnings in the unionized portions brought up the average level, the non-union area earnings were sufficient to keep the average below that of Illinois, Indiana, and Ohio. The final group of States, Virginia, Tennessee and Alabama was non-union and operated under a great variety of wage rates, lower than those specified in union contracts. By 1929 all of the states shown on Table X, except Illinois and Indiana, were non-union. The wage rates in Illinois and Indiana were reduced in a new union contract negotiated in 1928.

TABLE X

AVERAGE EARNINGS OF BITUMINOUS COAL MINE WORKERS FOR HALF MONTH, DAY, AND HOUR, AS REPORTED IN THE PERIODIC SAMPLE SURVEYS OF THE U. S. BUREAU OF LABOR STATISTICS

These data are derived from the detailed returns in the bulletins of the U. S. Bureau of Labor Statistics dealing with hours and earnings in bituminous coal mining (Bulletin Nos. 265, 316, 416, 454, 516, and 601; also Monthly Labor Review, October, 1931, pp. 162-174).

At intervals of approximately two years, the Bureau of Labor Statistics has obtained reports covering one semi-monthly pay period from selected mines in the principal coal States. The extent and composition of the sample has varied somewhat from year to year, but in recent surveys it has covered approximately one-third of the total number of men employed. The mines surveyed are generally the larger ones, including numerous captive mines, and the indicated average earnings, especially in the unorganized fields, during the depression may be above what would be found if all the smaller commercial mines were included as well.

A question may also arise as to the strict representativeness of the sample when a given State is rapidly changing from union to non-union status, as was true, for example, in Ohio after 1927. Under such conditions if the sample happens to include a disproportionate number of mines paying the union scale, the indicated hourly earnings may be above the average of all mines, or if the sample includes an undue proportion of mines on a non-union basis, the indicated hourly earnings may be below the actual average.

The figures herewith show the average earnings of all the tonnage men (miners, hand or machine including the cutters, and loaders) and of all day men (inside and outside). Of the two sets of data those for the day-men are the more accurate, because the time as well as the earnings of these day workers is recorded on the payrolls. The measurement of the hourly earnings of the piece workers or tonnage men, on the other hand, is extremely difficult, because of the general lack of systematic records of the time spent by them at work. An effort has been made by the Bureau of Labor Statistics to obtain special records of the time of tonnage men during the pay periods covered by the returns. In view of the great difficulty at most mines of keeping any accurate count on this point, the computed daily and hourly earnings of the tonnage workers cannot be considered to be as accurate as those of the day workers.

The months of the year in which each of the respective surveys was made are indicated in the second column of the table. It will be understood that not all mines or fields covered were sampled for the same pay period. Thus the survey of 1921-22 was made between the dates October 1 and February 15. Hence the finding for one State during the same survey may represent a payroll in October, 1921, and the finding for another State a payroll in February, 1922. At a time when wage rates were falling in the non-union fields, such differences in the periods of observation have doubtless in some instances affected the strict comparability of the averages from State to State.

The trend of wages during the intervals between these sample surveys is not accurately known.

From this explanation, it will be seen that the figures are not precisely comparable from either survey to survey or from State to State and that complete records for all mines in all pay periods might show different relationships. The data, however, are the most important body of evidence as the trend of miners' earnings during this period.

Year	Months in which sample pay period occurred	Illinois			Indiana			Ohio		
		Per half month	Per day	Per hour (b)	Per half month	Per day	Per hour (b)	Per half month	Per day	Per hour (b)
ALL WAGE EARNERS (TONNAGE AND DAY):										
1919	Jan.-May	$46.31	(a)	$ .771	$60.73	(a)	$ .761	$60.39	(a)	$ .730
1921-1922	Oct. 1-Feb. 15	82.61	$8.47	1.058	70.25	$7.92	1.065	69.07	$7.49	.973
1924	Oct.-Dec.	67.66	8.32	1.037	54.47	8.11	1.067	58.92	7.04	.895
1926-1927	Nov. 16-Mar. 22	84.58	8.58	1.051	88.42	7.96	1.062	65.31	6.61	.865
1929	First quarter	68.73	6.84	.880	61.05	6.65	.880	48.28	4.91	.619
1931	First quarter	46.39	6.81	.837	44.10	6.55	.892	31.40	4.08	.516
1933	February	33.38	5.10	.617	47.33	5.21	.658	25.34	2.83	.365
ALL TONNAGE MEN (MINERS, LOADERS, ETC.):										
1919	Jan.-May	50.35	(a)	.831	40.18	(a)	.830	61.57	(a)	.784
1921-1922	Oct. 1-Feb. 15	81.55	8.85	1.119	67.62	8.16	1.108	66.06	7.66	1.015
1924	Oct.-Dec.	66.66	8.46	1.068	53.83	8.44	1.133	54.05	6.99	.901
1926-1927	Nov. 16-Mar. 22	84.76	8.90	1.100	79.61	8.30	1.134	62.77	6.71	.861
1929	First quarter	67.55	7.04	.867	58.85	6.63	.926	43.83	4.87	.642
1931	First quarter	42.94	7.05	.869	37.12	6.77	.956	28.79	3.96	.506
1933	February	30.62	5.19	.622	43.95	5.42	.691	22.93	2.69	.353
ALL DAY MEN (INSIDE AND OUTSIDE):										
1919	Jan.-May	44.28	(a)	.589	42.12	(a)	.607	57.33	(a)	.586
1921-1922	Oct. 1-Feb. 15	68.03	7.66	.965	73.54	7.43	.918	71.83	7.11	.884
1924	Oct.-Dec.	69.99	7.59	.921	57.44	7.33	.903	69.70	7.18	.879
1926-1927	Nov. 16-Mar. 22	83.13	7.76	.925	82.16	7.58	.908	71.38	7.05	.873
1929	First quarter	71.40	6.58	.780	66.02	6.26	.776	53.01	5.03	.612
1931	First quarter	51.29	6.45	.769	54.31	6.18	.783	38.86	4.44	.544
1933	February	36.65	5.03	.611	51.44	4.96	.617	32.49	3.24	.380

Year	Months in which sample pay period occurred	Pennsylvania			Kentucky			West Virginia		
		Per half month	Per day	Per hour (b)	Per half month	Per day	Per hour (b)	Per half month	Per day	Per hour (b)
ALL WAGE EARNERS (TONNAGE AND DAY):										
1919	Jan.-May	$56.33	(a)	$ .735	$40.38	(a)	$ .605	$46.06	(a)	$ .676
1921-1922	Oct. 1-Feb. 15	58.14	$6.10	.747	53.08	$5.72	.780	58.36	$6.39	.850
1924	Oct.-Dec.	60.54	6.42	.773	47.85	5.42	.662	49.64	5.53	.731
1926-1927	Nov. 16-Mar. 22	63.99	6.16	.742	47.12	4.99	.611	54.73	5.45	.707
1929	First quarter	53.12	5.37	.603	43.75	4.95	.595	47.63	5.10	.634
1931	First quarter	38.89	4.71	.580	28.48	4.56	.556	36.47	4.66	.556
1933	February	22.70	3.03	.372	23.93	3.01	.366	23.13	3.12	.383
ALL TONNAGE MEN (MINERS, LOADERS, ETC.):										
1919	Jan.-May	57.27	(a)	.806	42.14	(a)	.687	49.94	(a)	.808
1921-1922	Oct. 1-Feb. 15	54.63	6.13	.774	51.43	5.65	.794	58.00	6.78	.961
1924	Oct.-Dec.	56.63	6.36	.779	47.54	5.76	.722	50.50	6.00	.852
1926-1927	Nov. 16-Mar. 22	61.03	6.18	.739	47.09	5.18	.696	56.00	5.85	.811
1929	First quarter	50.13	5.27	.645	43.24	5.15	.634	48.77	5.35	.649
1931	First quarter	35.45	4.51	.567	26.74	4.60	.569	34.96	4.72	.572
1933	February	20.58	2.83	.348	21.80	2.97	.346	21.66	3.04	.366
ALL DAY MEN (INSIDE AND OUTSIDE):										
1919	Jan.-May	54.46	(a)	.589	38.86	(a)	.482	42.09	(a)	.511
1921-1922	Oct. 1-Feb. 15	64.35	6.06	.699	55.70	5.52	.677	58.68	5.87	.703
1924	Oct.-Dec.	69.07	6.51	.760	46.33	4.99	.576	46.55	4.53	.576
1926-1927	Nov. 16-Mar. 22	69.09	6.11	.704	47.38	4.71	.566	53.06	4.91	.569
1929	First quarter	59.96	5.59	.639	44.63	4.64	.533	48.04	4.76	.558
1931	First quarter	57.15	5.80	.610	31.86	4.90	.538	38.83	4.57	.538
1933	February	28.46	3.57	.432	26.47	3.09	.365	25.51	3.85	.383

Year	Months in which sample pay period occurred	Virginia			Tennessee			Alabama		
		Per half month	Per day	Per hour (b)	Per half month	Per day	Per hour (b)	Per half month	Per day	Per hour (b)
ALL WAGE EARNERS (TONNAGE AND DAY):										
1919	Jan.-May	$33.84	(a)	$ .531	$30.79	(a)	$ .558	$36.65	(a)	$ .578
1921-1922	Oct. 1-Feb. 15	(a)	(a)	(a)	(a)	(a)	(a)	54.07	$3.78	.566
1924	Oct.-Dec.	37.39	$4.30	.545	31.77	$3.88	.595	34.64	4.18	.508
1926-1927	Nov. 16-Mar. 22	43.40	4.54	.550	30.61	3.44	.469	38.56	4.14	.476
1929	First quarter	42.46	4.17	.522	26.62	3.63	.463	33.67	3.67	.432
1931	First quarter	35.19	3.99	.482	22.36	3.14	.378	23.53	3.61	.421
1933	February	24.15	2.67	.313	12.38	2.42	.307	13.80	2.39	.269
ALL TONNAGE MEN (MINERS, LOADERS, ETC.):										
1919	Jan.-May	42.37	(a)	.637	33.73	(a)	.690	42.62	(a)	.702
1921-1922	Oct. 1-Feb. 15	(a)	(a)	(a)	(a)	(a)	(a)	36.05	4.18	.580
1924	Oct.-Dec.	39.44	4.62	.610	31.62	4.05	.586	37.04	4.66	.548
1926-1927	Nov. 16-Mar. 22	46.30	5.04	.649	29.63	3.49	.661	40.92	4.57	.530
1929	First quarter	42.83	4.30	.566	26.91	3.86	.500	33.58	4.03	.453
1931	First quarter	35.77	4.01	.515	20.62	3.12	.372	22.32	3.69	.431
1933	February	22.42	2.56	.305	16.56	2.40	.302	12.65	2.31	.262
ALL DAY MEN (INSIDE AND OUTSIDE):										
1919	Jan.-May	27.34	(a)	.444	27.35	(a)	.402	29.30	(a)	.435
1921-1922	Oct. 1-Feb. 15	(a)	(a)	(a)	(a)	(a)	(a)	30.80	3.14	.383
1924	Oct.-Dec.	35.01	3.77	.452	32.07	3.55	.438	31.85	3.42	.393
1926-1927	Nov. 16-Mar. 22	39.82	3.93	.452	32.12	3.35	.440	35.35	3.85	.402
1929	First quarter	42.73	4.00	.466	26.16	3.28	.406	36.32	3.62	.399
1931	First quarter	34.98	3.96	.452	26.13	3.19	.393	25.74	3.45	.402
1933	February	26.90	2.89	.326	22.75	2.66	.380	14.63	2.92	.301

(a) Not published. (b) Figures for 1919 represent the average per hour in the mine; those for 1921-22 and thereafter represent the average per hour at the face including time for lunch.

The February 1933 survey disclosed that day men's daily earnings had fallen to $2.52 in Alabama, $2.66 in Tennessee, $2.89 in Virginia, $3.25 in West Virginia, $3.09 in Kentucky, $3.57 in Pennsylvania, and $3.24 in Ohio, while in unionized Illinois and Indiana these earnings were $5.03 and $4.96 respectively.

The discussion of declining earnings for day men applies equally well for the earnings of the tonnage men. Indeed it may be pointed out that after the day men strike of 1920 and the subsequent increase in wage rates for day men, the earnings of tonnage men relative to that of day men declined more rapidly. With falling demand for coal came drastic reductions in tonnage rates, decreased working time, and increased mechanization in an effort to cut costs. A greater degree of specialization and increased division of labor likewise tended to detract from the significance of the tonnage men - especially the pick miners. Only in the highly unionized States of Illinois and Indiana were the tonnage men able to maintain some wage rate differential over the day men and thus have higher earnings. In the other states, especially after union organization had broken down, tonnage rates fell more rapidly than did day rates.

The earnings per day of tonnage men in Illinois during the period 1921-22 to 1927 ranged from $8.66 to $8.90, but by 1933 had declined to $5.15. In Indiana during the same period (1921-22 to 1927) the daily earnings ranged from $8.20 to $8.44, and in 1933 had declined to $5.41. Daily earnings of tonnage men in Ohio, however, where union organization had broken down after 1927, declined from $7.66 in 1921-22 to $2.69 in 1933. Similarly in Pennsylvania tonnage men's daily earnings during this period had declined from $6.13 to $2.83. The lowest earnings per day for tonnage men disclosed in the 1933 survey were found in Virginia, Tennessee, and Alabama, where they were $2.54, $2.40, and $2.31 respectively.

Code History of Wages and Hours: The general demoralization of labor relations, wages, and hours of work with which the bituminous coal industry was faced in the period preceding the summer of 1933 is clearly evident from the testimony presented in the hearings held by the National Industrial Recovery Administration from August 9 to 12, 1933.(*) These hearings were held for the purpose of presenting evidence, proposals, and recommendations for the formulation of a code of fair practices and competition for the industry. While much of the testimony presented was irrelevant to the immediate subject at hand, representatives from various coal producing areas did testify on conditions which they alleged made necessary certain wage provisions and wage differentials.

The N.R.A. attempted to reconcile the large number of proposed codes which were submitted by compiling a national basic bituminous coal code which would be "sufficiently flexible in its provisions to meet the needs of the various geographic divisions of the industry".(**) This code was submitted to the industry on September 7, 1933. Provisions were made for the hearing of any objections or amendments to the basic code on September 11, 1933.

(*) For a discussion of the various wage and hours provisions set forth in the proposed codes preceding the final emergence of the Bituminous Coal Code, see Chapter II.

(**) N.R.A., Release No. 673, Notice Regarding Basic Bituminous Coal Code.

The maximum hours of work and the minimum rates of pay standards were set forth in articles III and IV respectively. Since the provisions of this code immediately preceded those finally approved by the President, it is of some interest to make note of them.

Article III - Standards of Maximum Hours of Labor was as follows:

> "No employee shall be employed in excess of 32 hours in any calendar week during a consecutive period of 26 weeks in any twelve months period, nor in excess of 40 hours in any calendar week during the other 26 consecutive weeks of such twelve months period; PROVIDED, however, that any employer may elect to operate any mine on a schedule of employment of not to exceed thirty-six hours per week throughout the twelve months period. No employee shall be required to work more than 8 hours in any one day at the usual working place (exclusive of lunch period) whether paid by the hour or on a tonnage basis"....
>
> "If at any mine a majority of the unemployed workers, who are organized in the manner required in Section 7(a) of the National Industrial Recovery Act, express their desire to share available work with other bona fide unemployed workers of the same mine, or a written request so to share the work is addressed to the mine management, signed by a majority of the employed workers, the number of hours work to be allotted to the unemployed workers shall be determined, by conference of the Mine Adjustment Committee, or in case of disagreement by the decision of the District Adjustment Committee and duplicate copies of the decision of the Committee shall be furnished to the local mine management and the local mine employees' duly authorized representatives."

Article IV - Standards as to Minimum Rates of Pay, Inside Rates - was expressed in the following language:

> "The basic minimum rate for inside labor including the occupations of tracklayers, bottom cagers, drivers, trip riders, gripmers, water haulers, machine haulers and timbermen shall be the rate hereinafter set forth in Schedule A for each District then described, with the understanding that other occupations will maintain their customary differentials above or below the said basic minimum rate. Should any of these rates conflict with contract rates in any district or portion thereof, negotiated collectively with a union of the employees' own choosing, the contract rates shall govern."
>
> "Each of the Divisional Code Authorities hereafter described shall within fifteen days from the effective date of this Code, submit for the consideration and approval of the National Recovery Administration a supplemental schedule setting forth its minimum rates of pay to mine workers employed on a tonnage basis in pick mining, hand loading, undercutting, solid shooting, and also to

mine workers employed in strip mining, mechanized mining and deadwork, to conform to the basic minimum rate for inside labor, and where the mine workers in any district are organized and have bargained collectively for such wages and working conditions, to report what, if any, collective bargains have been made."

Some other provisions set forth in Article V (Conditions of Employment) of this Code which differ from those in the finally accepted Code were:

(f) "No person under sixteen (16) years of age shall be employed inside any mine nor in hazardous occupations outside any mine, provided, however, that where a state law provides a higher minimum age, the state law shall govern."

Section (g) provided for a report to the N.R.A. from a designated investigation committee on or before November 30, 1933, regarding among other things: (1) the practicability and cost (assuming maintenance of existing rates of pay) of applying to bituminous coal mining a shorter work day and work week, giving condideration to a 30-hour, a 32-hour and a 35-hour week, (2) the effect and advisability of revising wage differentials in the various regions and districts of the industry. Provision was also made for a joint conference on December 1, 1933, between representatives of employers and employees under the Code to discuss wages, hours and differentials. Unless this conference made revisions the labor provisions of the Code were to continue until April 1, 1934, and thereafter during the effective period of N.I.R.A. or until changed by mutual agreement of operators and mine workers subject to approval of the Administrator.

The provisions noted above called forth a storm of protest at the hearing held by the N.R.A.. The Code, as finally drafted after a conference of N.R.A. officials and a joint conference of operators appointed September 12, 1933, followed the general outline of the draft made public September 7, but made a number of modifications. Among the more important changes in labor provisions were:

(1) An increase in the maximum work-week from 36 to 40 hours.

(2) Limiting the decision to share work with unemployed miners to mutual agreement between the employed workers at the mine and their employers, thereby eliminating the provision for appeal to a district adjustment committee.

(3) Elimination of occupational specifications in setting up minimum wages.

(4) Elimination of provision requiring Divisional Code Authorities to submit supplemental schedules covering minimum piecework rates.

(5) Increase in the minimum age for employment inside the mine or in hazardous occupations outside from 16 to 17 years.

(6) Date for review of wages and differentials postponed from

November 30, 1933 to January 5, 1934.

(7) Application of maximum hours, minimum rates and differentials limited to April 1, 1934, unless revision is made by mutual agreement as a result of the January conference.

(8) Provision that the difference in districts in the minimum rates under Schedule A are not to be considered as fixing permanent wage differentials or establishing precedents for future wage scales.

When the Code was submitted to the President for approval, he made three important changes before adding his signature. He added a sentence to Section 3, Article VII relating to compilation of statistics by Code Authorities, which stated:

> "All coal producers subject to the Code shall furnish to any government agency or agencies designated by the Administrator such statistical information as the Administrator may, from time to time, deem necessary for the purpose recited in Section 3(a) of the National Industrial Recovery Act; and any reports and other information collected and compiled by a Code Authority, as heretofore provided, shall be transmitted to such government agencies, as the Administrator may direct."

The President reserved the right to name three additional members to the National Bituminous Coal Industrial Board as against the number (15) specified in the Code submitted to him.

The third important change involved the highly controversial Section 7(a) of the N.I.R.A. (*)

(*) Section 7(a) of Title 1 of the National Industrial Recovery Act stated:

> "Every code of fair competition, agreement, and license approved, prescribed, or issued under this title shall contain the following conditions: (1) That employees shall have the right to organize and bargain collectively through representatives of their own choosing, and shall be free from the interference, restraint, or coercion of employers of labor, or their agents, in the designation of such representatives or in self-organization or in other concerted activitied for the purpose of collective bargaining or other mutual aid or protection; (2) that no employee and no one seeking employment shall be required as a condition of employment to join any company union or to refrain from joining, organizing, or assisting a labor organization of his own choosing; and (3) that employers shall comply with the maximum hours of labor, minimum rates of pay, and other conditions of employment, approved or prescribed by the President."

The Code as it went to the President contained a Schedule B which was a "clarification" of Section 7(a) as set forth by General Johnson and Mr. Donald Richberg. The clarification statement announced that the section meant nothing more nor less than it stated and that "the words 'open shop' and 'closed shop' are not used in the law and cannot be written into the law." The President, however, eliminated paragraph b of Article V which referred to Schedule B on the basis "that attempts by those submitting codes to interpret Section 7(a) of the National Industrial Recovery Act have led to confusion and misunderstanding; such interpretations should not be incorporated in Codes of Fair Competition".

The Bituminous Coal Code was approved by President Roosevelt on September 18, 1933, but it did not become effective until October 2, 1933. The labor provisions as set forth in this Code have been considered models for industry. This distinction is not surprising when the great number and diversity of occupations in the two major classifications of tonnage men and day men in this industry are considered. Moreover, the steady disintegration of union power in the decade preceding the enactment of the N.I.R.A. seemed to indicate that mine labor would lack a strategic position from which to voice its demand. A few weeks prior to the enactment of the N.I.R.A., however, the United Mine Workers launched a nation wide organization campaign, penetrating almost every non-union area. With surprisingly little active opposition from the operators, except perhaps in the case of the steel affiliated captive mines, the union made effective use of Section 7 (a) of the Act.

Immediately prior to the union organization campaign only a very small percentage of the national tonnage was being produced under contract with the union. The principal wage contracts were those in effect for considerable portions of Division II and IV, the State of Wyoming, two operators in the State of Washington, one operator in the State of Colorado, a number of operators in Southern Ohio, a few operators in Northern West Virginia, and two operators in Pennsylvania. The remainder of the industry operated without contract wage scales in their respective areas. As might be expected wages and hours were neither uniform nor stable for the major portion of the industry, covering in excess of 90 per cent of the national tonnage. When code negotiations began in Washington in the summer of 1933, however, the United Mine Workers were in a position to give effect to their demands.

At the same time that the code negotiations were taking place, a wage and hour agreement between the Appalachian operators and the United Mine Workers was being negotiated under the direction of the President in conformity with Section 7(b) of the Recovery Act. Informal negotiations began on August 19, 1933 and the agreement was signed on September 21. It represented a reestablishment of the United Mine Workers in Ohio, Pennsylvania and certain outlying districts to the south as well as an extension of union organization to Southern fields never before unionized. The wage agreement ran from October 2, 1933 to March 31, 1934 affecting a normal output of 300,000,000 to 350,000,000 tons and approximately 315,000 mine workers in Ohio, Pennsylvania, West Virginia, Maryland, Virginia, Eastern Kentucky and Northern Tennessee.

President Roosevelt approved and signed the agreement on September 22. He stated when he approved this agreement that it was with "the

understanding that the hours, wages and conditions of employment reO cited herein may also ne applied to employees not parties hereto; and that the requirements of Section 7(a) of the National Industrial Recovery Act will be complied with in carrying out this agreement".

The appalachian wage agreement provided that supplementary district agreements be made to care for local conditions. It also repeated the Bituminous Coal Code provision for a conference of employers, employees,and the N.R.A. on January 5, 1934 to discuss wages, hours and differentials. Other provisions related to the 8-hour day, election of checkweighmen, selection of pit committees and machinery for settling disputes.

Captive mine operations in Western Pennsylvania gave rise to considerable difficulty before agreement could be reached. An extensive strike involving approximately 75,000 men for a period of several months took place. The central demand was effectuation of Section 7(a) of the Recovery Act. The steel companies contended that they were operating under the Steel Code and that it was not necessary for them to sign the Coal Code or enter into wage agreements. After United Mine Workers efforts to halt the stoppage had failed, the N.R.A. intervened. An agreement was finally signed September 29 under Section 4(a) of the N.I.R.A. (*) Steel companies operating captive mines agreed "to comply with the maximum hours of labor and minimum rates of pay which are or shall be prescribed under or pursuant to the Coal Code for the district in which such mine is located so long as the Coal Code shall remain in effect". The situation with reference to formal union recognition and the "check-off" continued to be complicated.

The Bituminous Coal Code established basic minimum rates for two classes of labor, namely, outside common labor and inside skilled labor. It further provided that "other classifications of employment will maintain their customary differentials above or below said basic minimum rates and that payments for work performed on a tonnage or other piece work basis will maintain their customary relationship to the payments on a time basis provided in said basic minimum rates."

Title 1, Section 4(a) of N.I.R.A.

> "The President is authorized to enter into agreements with, and to approve voluntary agreements between and among, persons engaged in a trade or industry, labor organizations, and trade or industrial organizations, associations or groups, relating to any trade or industry, if in his judgment such agreements will aid in effectuating the policy of this title with respect to transactions in or affecting interstate or foreign commerce, and will be consistent with the requirements of clause (2) of subsection (a) of Section 3 for a code of fair competition."

In determining the minimum rates of wages, it was necessary to consider the competitive relationship of the many producing fields in different coal-consuming markets. The competitive elements arise out of the quality of coal, freight rates, the labor market, etc. Since the relative importance of these factors vary from field to field, the establishment of separate districts was necessary. The Deputy Administrator, K. M. Simpson, stated that:

> " "As far as practicable, however, the number of districts has been kept to a minimum and the spread in rates has been reduced to the narrowest limits possible and still promote competitive equilibrium. Rates submitted in the numerous codes proposed showed wide variations, both as to the minimum wages and the differentials between different competing areas. It would be utterly impossible to reconcile all the conflicting rates proposed by the different interests involved. The effort has been made to arrive at a set of rates which would result in the least economic dislocation and at the same time carry out the purposes of the N.I.R.A. - employment and increased purchasing power." (*)

These sectional differences were recognized by dividing the country into seventeen wage areas. A uniform minimum wage rate existed within each of these wage areas, except in two districts. (**) No data were available from which accurately to determine the differentials which should exist between competing districts. Outwardly these minimum rates were fixed by the N.R.A. when the original code was promulgated; actually, in most instances, the rates resulted from collective bargaining and the N.R.A. merely incorporated these contract rates into the Code. (***) Thus, the differentials in rates of pay represented agreements arrived at by representatives of different geographical divisions within the industry as being fair and equitable, and approved by the N.R.A. Basic rates set forth in the Appalachian wage agreement, referred to above, and in earlier unexpired contracts in fields outside of the Appalachian region (for example, Indiana and Illinois) became the basic minimum rates specified in the Code. In other districts where no union contracts to set the standards

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(*) N.R.A., Code of Fair Competition for the Bituminous Coal Industry, Washington, 1933, pages XII and XIII.

(**) District F - Iowa; Wayne and Appanoose Counties of Iowa.
District K - New Mexico; Southern Colorado.

(***) Hale, Sydney A., The Bituminous Coal Mining Industry, Chapter VIII, p. 169 in Galloway, George B. and Associates, Industrial Planning Under Codes, Harpers, 1935.

existed, the N.R.A. and the interested operators negotiated the minimum rates. By September 29, 1933 when the Supplemental Executive Order was made public, (*) every district except Alabama and Texas had accepted the minimum rates proposed by the N.R.A. Texas was eliminated from consideration on the basis that its business was entirely intrastate. Considerable controversy existed in Alabama, where it was contended that the minimum rates of $3.40 per day for inside skilled labor and $2.40 per day for outside common labor had been imposed, but efforts were being made to have the operators accept these rates. Western Kentucky operators had proposed rates of $2.64 and $2.24 and strenuously protested against a proposed base rate of $3.84 per day for inside labor, but finally accepted rates of $4.00 for inside skilled labor and $3.00 for outside common labor. October 2, 1933, the date when the Code went into effect, found basic rates of pay for all producing areas in the industry and more than 90 per cent of the national tonnage under union wage contracts.

The basic minimum rates as established by the Bituminous Coal Code are shown in Table XI. Districts A, B, C, H and J-1 comprised Division I of the bituminous coal industry. These districts, with the exception of Western Kentucky, were in direct competition with one another, often selling similar coals in the same markets. Moreover, since Division I produced about 70 per cent of the national tonnage, it was extremely important that the basic minimum wage in each of the wage districts be so adjusted to one another as to bring about fair and comparable competitive conditions. The Bituminous Coal Code was the first instrument to give effective recognition to a condition in the industry which had resulted in constant and recurring price cutting and wage slashing in an ever downward spiral, namely, the competition between unionized portions of the Northern producing areas and the non-union coal fields in the South.

(*) This order approved the revised Schedule A of the Bituminous Coal Code.

TABLE XI
BASIC MINIMUM RATES OF PAY ESTABLISHED UNDER THE CODE AND BY AMENDMENTS Nos. 1, 2 and 3

District	Effective October 2, 1933 (Original Code)				Effective April 1, 1934 (Amendment No. 1)				Effective April 1, 1934 (Amendment No. 2)				Effective June 11, 1934 (Amendment No. 3)			
	Minimum inside skilled labor		Minimum outside common labor		Minimum inside (Skilled Labor)		Minimum outside (Common Labor)		Minimum inside skilled labor		Minimum outside common labor		Minimum inside, skilled labor		Minimum outside, common labor	
	Dollars per day	Cents per hour	Dollars per day	Cents per hour	Per day	Per hour	Per day	Per hour	Per day	Per hour	Per day	Per hour	Per day	Per hour	Per day	Per hour
DISTRICT A																
Pennsylvania	$ 6.60	87½	$ 6.60	88	$6.00	$0.71⅓	$4.00	$0.57⅛								
Ohio	$ 6.60	87½	$ 6.60	88	5.00	.71⅓	4.00	.57⅛								
Lower Peninsula of Michigan	$ 6.60	87½	$ 6.60	88	5.00	.71⅓	4.00	.57⅛								
Panhandle District of West Virginia [1]	$ 6.60	87½	$ 6.60	88	5.00	.71⅓	4.00	.57⅛								
DISTRICT B																
Northern West Virginia [2]	$ 6.30	84½	$ 6.30	63	5.00	.71⅓	4.00	.57⅛								
DISTRICT C																
Southern West Virginia [3]	$ 6.30	83⅓	$ 6.30	63	4.60	.65⅞	3.60	.51⅜								
Eastern Kentucky [4]	$ 6.30	87½	$ 6.30	63	4.60	.65⅞	3.60	.51⅜								
Upper Potomac District of West Virginia [5]	$ 6.20	87½	$ 6.20	62	4.60	.65⅞	3.60	.51⅜								
Maryland	$ 6.30	83⅓	$ 6.30	63	4.60	.65⅞	3.00	.51⅜								
Virginia	$ 6.30	83⅓	$ 6.30	63	4.60	.65⅞	3.60	.51⅜								
Northern Tennessee [6]	$ 6.30	83⅓	$ 6.30	63	4.60	.65⅞	3.60	.51⅜								
DISTRICT D																
Indiana	$ 6.37½	87½	$ 6.30	63¾	$ 6.37½	.65⅞	$ 4.20	.60								
DISTRICT E																
Illinois	$ 6.00	83⅓	$ 6.00	60	5.00	.71⅓	4.00	.57⅛								
DISTRICT F																
Iowa [7]	$ 6.70	93¾	$ 6.00	60	4.70	.67⅛	4.00	.57⅛								
Wayne and Appanoose Counties of Iowa	$ 6.66	87	$ 6.66	66¾	4.50	.65⅛	4.00	.57⅛								
DISTRICT G																
Missouri, Kansas, Arkansas, and Oklahoma	$ 6.78	46¾	$ 6.38	41	4.38	.62½	2.75	.53¾	4.38	.62½	2.75	.53¾	4.38	0.62½	3.75	0.53⅜
													4.00	.57⅛	3.53	.50⅜
DISTRICT H																
Western Kentucky [8]	$ 6.00	80	$ 6.00	87½	4.80	.66⅔	3.75	.53⅛								
DISTRICT I																
Alabama	$ 6.40	42½	$ 6.40	80					3.80	.54⅓	2.80	40				
Georgia	$ 6.40	42½	$ 6.40	80					3.80	.54⅓	2.80	40				
Hamilton and Rhea Counties of Tennessee	$ 6.40	42½	$ 6.40	80					3.80	.54⅓	2.80	40				
District J-K																
Marion, Grundy, Sequatchie, White, Van Buren, Warren, and Bledsoe Counties of Tennessee	$ 6.86	48	$ 6.84	88½					4.24	.60⅝	2.24	.46⅜				
DISTRICT M																
New Mexico	$ 6.46	66	$ 6.76	46¼	5.10	.72⅜	$ 4.10	.56⅜								
Southern Colorado [9]	$ 6.46	86½	$ 6.76	46¼	5.10	.77⅛	4.10	.56⅜								
DISTRICT L																
Northern Colorado [10]	$ 6.00	80½	$ 6.76	46¼	5.25	.75	$ 4.25	.60⅜								
DISTRICT M																
Utah	$ 6.44	88	$ 6.46	66	5.44	.77⅜	6.46	.84								
DISTRICT N																
Southern Wyoming	$ 6.42	87¼	$ 6.44	66¼	$5.42	$0.77⅛	$4.44	$0.63⅛								
Northern Wyoming	$ 6.42	87¼	$ 6.84	56¾	5.42	.77⅛	6.84	.63⅛								
DISTRICT O																
Montana	$ 6.82	70¾	$ 6.82	60¼	5.63	.80⅜	6.82	.68⅛								
DISTRICT P																
Washington	$ 6.40	87½	$ 6.00	80	5.40	.77⅛	$ 4.00	.57⅛								
DISTRICT Q																
North Dakota	$ 6.00	80	$ 6.20	60	$ 4.50	64⅜	$ 3.70	.52⅞								
North Dakota (strip mining, pit labor)					$ 4.50	64⅜	$ 3.70	.52⅞								
South Dakota	$ 6.00	80	$ 6.20	60	$ 4.50	64⅜	$ 3.70	.52⅞								

Tipple Employees

[1] Includes Hancock, Brooke, Ohio, and Marshall Counties.
[2] Includes Monongalia, Preston, Marion, Harrison, Taylor, Lewis, Barbour, Gilmer, Upshur, Randolph, Braxton, and Webster Counties and those mines in Nicholas County served by the B. & O. R. R.
[3] Includes all mines in counties of West Virginia not named under districts A and B and under the Upper Potomac District.
[4] Includes all mines in Kentucky located east of a north and south line drawn along the Western boundary of the City of Louisville.
[5] Includes Grant, Mineral, and Tucker Counties
[6] Includes all counties in Tennessee not named Districts J and J-L
[7] Excludes Wayne and Appanoose Counties.
[8] Includes all mines in Kentucky west of a north and south line drawn along the western boundary of the City of Louisville.
[9] Includes all counties in Colorado not named under District L.
[10] Includes Jackson, Larimer, Weld, Boulder, Adams, Arapahoe, El Paso, Douglas, Elbert, and Jefferson Counties.

NOTE.—Differences between districts in the foregoing minimum rates are not to be considered as fixing permanent wage differentials or establishing precedents for future wage scales.

4 Changed by Amendment No 2

a Missouri, Kansas, Arkansas, and Oklahoma, except shaft, drift, or slope mines in those States.....
b Shaft, drift and slope mines in Missouri, Kansas, Arkansas, and Oklahoma.....

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This situation, which had demoralized the industry and had broken down union organization from the Jacksonville scale period forward to 1933 (*) was finally subjected to regulation through the influence of Section 7(a) of the NIRA leading to the Appalachian wage agreement and the incorporation of collectively negotiated basic rates for the Northern and Southern coal fields. The wage differential question became one of the most important and controversial issues in the industry. (**)

The basic minimum day rate established in District A (Division I - North, except Northern West Virginia) for inside skilled labor was $4.60 and for outside common labor $3.60. District C (Division I - South or Southern Appalachian areas) had $4.20 per day for inside skilled labor and $3.20 for outside common labor. Northern West Virginia (District B) held a mid-position in the competitive relationship between the Northern and Southern Appalachian areas. Its inside skilled day rate was $4.36 and its outside common day rate was $3.36.

In Indiana (District D) the day rate for inside skilled labor was $4.575 and for outside common labor $4.20. The Illinois (District E) rates for inside skilled and outside common labor were $5.00 and $4.00 respectively. These basic rates in Indiana and Illinois, as has already been stated, were in unexpired contracts and were not disturbed by the Bituminous Coal Code. Western Kentucky (District F), which entered into direct competition with Indiana and Illinois, had a $4.00 inside skilled rate and a $3.00 outside common rate. It, therefore, enjoyed a favorable differential of $1.00 against Illinois and 57½ cents for inside skilled and $1.20 for outside common against Indiana.

The coal producing areas in the deeper South, east of the Mississippi River, had the lowest basic rates in the industry. The minimum day rate in Alabama, Georgia and Southern Tennessee (District J) for inside skilled labor was $3.40 and for outside common labor $2.40. These areas were not very significant in the total tonnage produced and their competition was localized. It should be noted also that most of these areas had always been non-union. In general, therefore, although the wage scale was low it did not tend to depress the wage level of the industry as a whole. The Northern Tennessee coal fields (District J-1) had somewhat higher minimum rates - $3.84 for inside skilled and $2.64 for outside common labor.

West of the Mississippi River, the lowest wage rates were found in the southwestern coal fields - Missouri, Kansas, Arkansas, and Oklahoma (District G) where the inside skilled rate was $3.75 and that for outside common labor $3.28. District H which included all of Iowa was divided so that Wayne and Appanoose Counties represented a separate

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(*) See Chapter IV, section on Collective Bargaining - Wage Negotiations and Industrial Disputes.

(**) For a discussion of the wage differential problems and controversy, see Chapter IV, Section C.

section. This division was based upon a recognition of a difference in mining conditions and also on the fact that Wayne and Appanoose Counties had enjoyed a differential over the remainder of Iowa since 1928. The inside skilled rate for Iowa (exclusive of Wayne and Appanoose Counties) was $4.72 as against $4.56 for Wayne and Appanoose Counties, while the outside common rate was $4.00 against $3.86. The Dakotas were set up as a separate district (Q) with a rate of $4.00 for inside skilled and $3.00 for outside common.

As a result of the NRA and the adoption of the Code, New Mexico, Colorado, (except Rock Mountain Fuel Co. which began operating under union contract in 1928) Utah, and large parts of Wyoming, Montana and Washington came under union contracts. The lowest wage rates in these Rocky Mountain and Far Western States group existed in New Mexico and Southern Colorado (District K) where inside skilled labor received $4.48 and $4.44 per day respectively, while outside common labor in both areas received $3.75. District L (Northern Colorado) under the influence of the leadership of the Rocky Mountain Fuel Co. paid $5.00 for inside skilled labor and $3.75 for outside common labor. Utah, Wyoming and Washington paid inside skilled rates of $5.44, $5.42 and $5.40 respectively. The highest basic rates in the industry were paid in Montana where inside skilled labor received $5.63 per day and outside common labor received $4.82 per day.

The wage rates and hours of work which became effective with the adoption of the Code on October 2, 1933 continued in effect until March 31, 1934. However, the Southern Indiana Coal Operators' Association in a temporary agreement made with the United Mine Workers of District 11 (Indiana) protested against the basic rates established for Warrick and Vanderburgh Counties and made provision that the entire contract be reviewed by the Bituminous Coal Labor Board of Division II. (*) The protest stated that operators in these counties sold the bulk of their tonnage in local markets and that they were unable to withstand the competition of the low cost stripping operations to the north plus an unfavorable freight differential against Northern Indiana and Western Kentucky. The Divisional Coal Labor Board held a hearing on the matter on December 7, 1933 and on December 14, 1933 found that the wage differential requested for Warrick and Vanderburgh Counties, Indiana, namely, a rate of $4.20 for inside skilled labor and $3.60 for outside common labor, be granted. This recommendation to the NRA resulted in the issuance of an Administrative Order by General Johnson on December 22, 1933 establishing the recommended minimum rates which should be effective subject to the conference of employers and employees on January 5, 1934 as provided by the Code. The modification or exemption of Code rates for Warrick and Vanderburgh Counties represented the only change made prior to March 31, 1934.

In general, the Coal Labor Boards took the position that any ap-

(*) The full details of the wage differential problem for Warrick and Vanderburgh Counties, Indiana are treated in Section C.

plications for exceptions in wage rates either in individual mines or local areas where adverse mining or marketing conditions made payment of Code rates difficult or impossible, could not be granted. (*) The procedure for amending the Code and this for changes in wage schedules was such that modifications could be made only on recommendation of the Administrator and approval of the President, or by direct Executive Order of the President. As has already been pointed out, however, the Code did provide in paragraph (g) of Article V an opportunity for the industry (operators and mine workers) to suggest revisions in a conference on January 5, 1934.

The wage conference under the auspices of the N.R.A. did not meet on the scheduled date, but was postponed five times so that it finally went into session on March 26, 1934. Meantime, a number of important events, presaging the trend of opinions regarding wages and hours in the industry, were taking place.

The United Mine Workers at their convention, January 23 - 31, 1934 expressed their views regarding the national recovery program and particularly the Bituminous Coal Code. The scale committee in an adopted resolution stated that the shorter work week represented the only constructive approach to stabilization and more widespread employment. It also stated that national prosperity as well as prosperity in the bituminous coal industry "can come only through the medium of higher wage levels, which, of course, means increased purchasing power and a consequent increase in employment generally". The resolution stated that the enactment of the N.I.R.A. and the adoption of the bituminous Code created new relationships and responsibilities for miners, operators and the Federal Government. It held that a failure of the joint conferences with Appalachian producers to agree on wages, hours or working conditions would mean that the N.R.A. would have to solve the difficulties. The miners reaffirmed their demands for a 30-hour week and instructed the scale committee to make a formal demand for increased wages at the next joint wage conference. It is interesting to note in passing that a proposed resolution calling for government ownership of public utilities and basic industries was replaced by a resolution praising the N.R.A. and the benefits arising from the Bituminous Code.

Negotiations for a new Appalachian wage agreement began in Washington on February 24, 1934 after several preliminary conferences. Operators in Subdivision No. 1 (Smokeless Coal fields) were not represented because they wished to negotiate separately. Central and Western Pennsylvania operators then protested against a continuation of the conference on the basis that a proper correlation with the Smokeless areas was necessary. President Lewis then suggested that the Smokeless negotiations be conducted concurrently and as a result the Appalachian conference continued. The mine workers presented their demand for a 6-hour day, increased wages and adjustment of inequitable differentials. The operators countered with opposition to a change in wage levels but expressed willingness to adjust differentials. The next moves were the appointment of a negotiating committee made up of eighteen operators and eighteen miners and the adjournment of the conference subject to call. The Smokeless joint conference began March 1, 1934 with the appointment of a committee comprising ten operators and ten miners.

(*) Hogan, T. S., History of the Activities of Coal Labor Boards Under N.R.A., 1935, p. 35.

Thus, much in the same manner as when the Code wage rates and hours were being formulated, the 1934 N.R.A. wage conference (scheduled for January 5) began on March 26 so that the action of the Appalachian wage negotiations exerted tremendous pressure. While the delay in holding the conference was attributed to the fact that the Research and Planning Division of N.R.A. had not yet completed its statistical presentation of the earnings and employment data reported by the industry on Form C, perhaps equally important was the desire of the operators and miners to reach some agreement among themselves. When the statistical data on employment and earnings became available, considerable controversy arose regarding their accuracy, especially from those areas whose showing was poor. (*) As a matter of fact the statistical data were not used as a basis for revision of code hours and wages.

The N.R.A. wage conference began with a number of interesting statements indicating the conflict of interests which existed. The representative of the Northern West Virginia Panhandle operators favored a 30-hour week and stated that experience under the 8-hour day through better management and improved transportation made possible a greater output than with 10 to 14 hours of work under the "clean-up" system. (**) He advocated effective correlation of intra-divisional code prices, the Bureau of Mines to fix monthly allocations of tonnage and hours of work and suggested that prices be effective for the same period as wages, subject to appeal and review. Western Kentucky operators were opposed to a shortening of the work day and work week and demanded a widening in the wage differential as against competing fields. (***) The producers in states west of the Mississippi River generally favored maintenance of the existing Code hours, but demanded special provisions allowing extra working time during periods of peak demand. (****)

The second session of the wage conference was devoted primarily to presenting the views of the mine workers. The United Mine Worker representative for Districts 21, 25, and 24 (Southwestern Interstate Field) pointed out that the Deputy Administrator had ruled that existence of a valid contract was a bar to a revision or modification of Code wages even when such change was needed. (*****) He stated that a Southwest had formerly operated on the same wage scale as Illinois, Indiana and Iowa, but that an emergency 3 years before the Code necessitated acceptance of a lower wage schedule, but the Kansas miners who had a 4 year contract on a $5.00 base had voluntarily accepted a $1.25 reduction at the time the Code was adopted. He proposed that the minimum rate be increased from $3.75 to $4.60 for Arkansas, Oklahoma, Texas, Missouri and Kansas.

(*) See the following material in this Chapter on Employment and Earnings under the Code.

(**) Taylor, William, N.R.A. Conference on Shortening Hours and Increasing Wages, March 26, 1934, Vol. I, p. 7 et seq.

(***) Van Norman, J., Ibid, supra p. 15.

(****) McAuliffe, Eugene (Rocky Mountain - Pacific Coal Association) Ibid, supra, p. 26 et seq; Houck, Stanley B. (North Dakota - South Dakota) p. 64 et seq; Clark, Albin M. (Division IV) p. 196 et seq.

(*****) Fowler, David, Ibid, supra, Vol. II, p. 204 et seq.

The Iowa mine workers also favored a uniform rate, stating that the wage difference in competing areas had caused more unemployment in Iowa than had existed prior to the Code. (*) A similar proposal was made by the miners in District 15 (Colorado and New Mexico). The Western Kentucky miners (U.M.W.) protested against low wages and requested a $4.60 base. The miners in Indiana favored the proposal, but asked that Warrick and Vanderburgh Counties be returned to the $4.575 rate as originally specified in the Code. The representative of the Michigan miners pointed out that the Code rates were lower than those of the contract which had expired April 1, 1933. The Michigan miners looked to a revision of their rates to the pre-Code level.

In general, the operators opposed any wage revision upward and in a few cases as the hand-loading mines in Saline County, Illinois, requested reductions. Operators in thin seam mines in Tennessee favored a reduction of day rates and an increase in mining and loading rates. The Northern Colorado operators, while protesting against working time reductions, pointed out that 90 per cent of their tonnage paid $5.25 (Code base was $5.00) and urged that Southern Colorado rates be increased to the $5.00 level. (**) In Alabama a strike had been settled by a wage contract signed March 16, 1934 which was effective until April 1, 1935 subject to N.R.A. regulation and the Alabama operators held that they had already made the wage revisions which the conference generally was considering.

In reality, the wage conference was marking time. Delays and postponements were frequent. Operators were growing restive and demanded that the N.R.A. make known the wage and hours proposals for the industry. Meantime, the Appalachian wage conference was continuing under great pressure in an effort to arrive at an agreement between operators and miners. Such an agreement was made at 3 A.M. on March 30, 1934.

The first speaker in the March 30th session of the N.R.A. wage conference announced that the Appalachian agreement had been signed, making substantial changes as to maximum hours and wages. (***) He stated that the Joint Conference of Miners and Operators had adopted a resolution which proposed to amend Articles III and IV of the Bituminous Coal Code.

The resolution proposing the amendments was approved not only by the operators and the districts of the United Mine Workers of America represented in the Appalachian agreement, but also by all the United Mine Worker districts in the country. The porposed amendments to the Code were certified to by Eastern Subdivision, Western Pennsylvania and Ohio Code Authorities.

It was proposed that Article III - Maximum Hours of Labor - should be amended to read as follows:

(*) Wilson, Frank, Ibid, supra. Vol. II. p. 211 et seq.

(**) Roche, Josephine, Ibid, supra, Vol. II, p. 260.

(***) O'Neill, Charles, Ibid, supra, Vol. III, p. 293 et seq.

"No employee, except members of the executive, supervisory, technical and confidential personnel, shall be employed in excess of seven hours per day and five days per week, subject to the exceptions hereinafter stated.

"Seven hours of labor shall constitute a day's work and this means sevenhours work at the usual working places for all classes of labor, exclusive of the lunch period, whether they be paid on the day or the tonnage or other piece work basis; except in cases of accident which temporarily necessitate longer hours for those required on account thereof, and also excepting that number of workers in each mine whose daily work includes the handling of man-trips and those required to remain on duty while men are entering and leaving the mine.

"The following classes of mine workers are exempted from the provisions as to the maximum hours of work:

( ) All workers engaged in the transportation of coal shall work the additional time necessary to handle man-trips, and/or haulage animals, and all coal in transit, and shall be paid the regular hourly rates. Outside workers engaged in the dumping, handling and preparation of coal, and in the manufacture of coke, shall work the additional time necessary, not to exceed thirty minutes, to dump and prepare the coal delivered to the tipple each day and to complete the usual duties incidental to the operation of coke ovens, and shall be paid the regular hourly rates. This rule shall not encourage the working of such overtime except where it is necessary to take care of the conditions named.

(b) Employees engaged at power houses, substations and pumps operating continuously for 24 hours daily are especially exempted from the seven-hour provision. Special exemption of employees other than those named above may be provided, by joint agreements negotiated in accordance with this code, which shall not provide for work in excess of 8 hours per day and 40 hours per week."

The other proposed amendment pertained to Article IV - Minimum Rates of Pay - and stated that from April 1, 1934 to April 1, 1935 the basic minimum rate for inside skilled labor and the basic minimum rate for outside common labor shall be the rate set forth in Schedule A (see Column 2, Table XI), with the understanding that other classifications of employment will maintain their customary differentials above or below said basic minimum rates. It proposed in order to secure parity between minimum day rates and minimum tonnage rates that on the basis of a 2,000 pound ton, pick mining be increased 10 cents; cutting, 1 cent; and all yardage and deadwork be increased 9 per cent. However, the minimum tonnage rates in Districts B, G, H, J and J-1 should be further increased in order to obtain a parity with day rates which Schedule A prescribed. The proposed schedule of minimum rates provided for a $5.00 inside skilled rate and a $4.00 outside common rate for District A. The Northern West Virginia (District B) wage differential was eliminated and the same wage rates were given to District B as to District A. The inside skilled rate for District C was $4.60 and for outside common labor, $3.60. The basic minimum rates in Division II (Districts D, E and F - Indiana, Illinois and Iowa) remained undisturbed. Inside skilled basic rate of

$4.60 was to be applied to all fields south of the Ohio River and east of the Mississippi River, placing them on par with District C (Division I - South). The outside common labor rates for these fields were likewise to be the same as in Division I - South ($3.60), except that the Western Kentucky rate would be $3.75. In a general sense all the northern coal fields east of the Mississippi paid $5.00 and $4.00 (Indiana $4.57½ and $4.20) while the southern fields paid, in the main, $4.60 and $4.00. The proposed amendment, therefore, sought to establish uniform rates over extensive areas and for a large portion of the southern fields it proposed to lessen the wage advantage over northern fields.

West of the Mississippi River, the basic minimum rates were also to be changed so as to bring about greater uniformity in wage rates. Thus in the southwestern coal fields (District G) the inside skilled rate was to be $4.60 and for outside common labor, $4.00. The minimum rates in Districts K and L were to be increased, but the increase in the former district was to be much larger so that the wage difference between the two districts was greatly lessened. District K was to pay $5.10 and $4.10 8/10, while District L was to pay $5.25 and $4.25. The wage rates in North and South Dakota were to be changed to $4.50 and $3.70.

The foregoing hours and wage amendment proposals have been treated in some detail, because they became the bases of considerable dispute in the industry. When the proposals were brought before the N.R.A. wage and hours conference, they were received with much objection. Mr. Blackwell Smith, the presiding N.R.A. official, at this session of the conference stated that "if there be voiced no objection, we will be forced to assume that everyone here has no objection to any amendment suggested." Almost all the operator representatives in the industry, outside of the Appalachian wage negotiating unit, voiced an opinion to the effect that no opportunity had been given to consider the amendment proposals and while they did not wish to render an objection they reserved all rights to withhold their approval until proper consideration to the proposals had been given. Especially vigorous were the protests made by Northern West Virginia, Alabama, Western Kentucky, Tennessee, and the Southwestern coal areas.

In reply to Northern West Virginia's protest, an operator representative from Western Pennsylvania explained that the Appalachian wage conference had agreed to eliminate the Northern West Virginia wage differential on the grounds that no difference in cost of living existed and that f.o.b. mine costs were already low in Northern West Virginia. (*) However, when this representative was asked to explain how the minimum rates for Western Kentucky had been determined, he was at a loss for an answer.

Some of the operators wished to have the conference adjourned for a week so that some time and study could be devoted to the proposed changes. The attitude of the N.R.A. was expressed in the following language: (**)

> "April 1st is at hand and while we will not rush the Administrator into any action that is unduly precipitous, there will be the necessity of some pronouncement from the Administrator before the end of the day tomorrow (March 31), as I see the situation, and the nature of that announcement, as to what the operators and miners may expect so far as the Code is concerned will, in the nature of things depend upon what we, in conference, decide privately, and the Administrator after you have all had your say.
>
> "The Administration has no thought of putting out this proposed amendment, as it is read today, as the Administration's proposal at this time. We are going to confer, in the light of what has been said today, and in the light of what may be said tomorrow morning if my proposal is carried out, (to continue the conference) as I think it may be, and tomorrow, before the end of the day, I think an announcement can be expected."

Mr. John L. Lewis then stated that the proposals were the result of five weeks' effort on the part of Appalachian operators and mine workers and that they were the most constructive ever negotiated in the coal industry. He held that the 7-hour work day and 35-hour week with the increased wage base would make an important contribution to increased purchasing power. He pointed out, significantly, that Code wages expire March 31, 1934 and that some 325,000 or 350,000 mine workers in the Appalachian area would find themselves without a wage agreement on April 1st. Mr. Lewis stated that the Indiana and Illinois wage bases were on a parity as was Iowa and so these were not disturbed. Alabama had received preferential treatment, he said, which was unjustified economically and that its rates were being adjusted to those of other southern fields. He stated that Western Kentucky minimum rates were out of alignment with those of Eastern Kentucky, Illinois, or Missouri and therefore the proposed rates made for a more proper competitive relationship. A similar situation applied with reference to Kansas, Arkansas and Oklahoma in maintaining parity with Missouri. President Lewis con-

(*) Morrow, J.D.A., N.R.A. Wage and Hours Conference, Ibid, supra, Vol. III, pp.349 - 353.

(**) Smith, Blackwell, ibid, supra, Vol. III, p. 357.

cluded his statement by saying that the United Mine Workers joined with the Appalachian operators in favoring the proposed changes.

The N.R.A. conference continued the following day (March 31, 1934) and was concluded without any change or clarification of the situation which had developed. Alabama and Western Kentucky bitterly opposed the amendment as a hasty and ill conceived measure. The Smokeless operators also protested on the score that the proposed amendment made a distinct departure from the Code in Attempting to fix minimum rates for tonnage men. The N.R.A. decided to have a hearing on April 9, at which time the issues were to be further discussed.

A few hours after the conclusion of the wage and hours conference (March 31, 1934), the N.R.A. issued an executive order declaring the existence of a serious emergency in the industry and adopting the wage and hour proposals as effective Code Amendments pending the public hearing of April 9.

During the first week in April, Illinois and Indiana operators accepted the 7-hour day, although their contracts, which preceded the enactment of N.I.R.A. and were still effective, specified an 8-hour day. The Sahara and Wasson Coal Companies, Saline Count, Illinois, held out for a 50 cent differential and were confronted by a strike. Only a few Western Kentucky mines continued to operate. Northern West Virginia was almost completely shut down. "Holiday" suspensions occured in some districts signatory to the new Appalachian agreement, while Logan County, West Virginia, was among the coal producing areas most affected by stoppages. Discontent and uncertainty were apparent in many portions of the industry.

The public hearing held by the N.R.A. April 9-11, 1934, was highly controversial and acrimonious indicating very real differences of opinion in the industry. The wage changes came up for greater discussion than did the reduction in hours so that in the main the central problem was that of wage differentials between competing districts. Alabama operators were especially vehement in their protests, claiming that 98 per cent of the State's commercial tonnage opposed the amendments. (*) They claimed that the Executive Order of March 31, 1934 was invalid, arbitrary, adopted without hearing and in violation of the Code. These operators pointed out that Article IV of the Code permitted a Code Authority to recommend an amendment but that other Code Authorities had a right to an orderly hearing. So strong was the Alabama opposition that on April 6, 1934 the operators secured an order from the Federal District Court restraining the N.R.A. from enforcing the Code Changes. The Alabama operators requested that a status quo be maintained until the wage and hour proposals had been submitted to the National Bituminous Coal Industrial Board as provided in Article VII, Section 4 of the Code.(**) Their representative went on to say that:

(*) Johnston, Forney, N.I.R.A. Hearing on Bituminous Coal Industry Modification Proposal, April 9-11, 1934, Vol. I, p. 15 et seq.

(**) Ibid, supra, Vol. III, (Night Session) p.786 et seq.

> "I make the assertion here that the Administrator in approving the so-called amendments on March 31st, not only did not act after recommendation of the Industrial Board but acted without knowledge of or response to the data assembled under Article V (g) and in both respects acted in violation of the Code."

In the concluding statements the Alabama operators said:

> "So far as we are concerned we have definitely and finally determined that we will not conform to any further one-man determination of policy and dictation in repudiation of essential basis and covenant of the Code."

Southern Tennessee and Georgia operators who were a part of the same divisional area (Division III - Alabama, Georgia and Southern Tennessee) were joined by manufacturers' associations in that region in similarly protesting the wage changes. The Southern Appalachian operators, on the other hand, stated that they had previously withdrawn from the wage conference because Alabama and Southern Tennessee had continued to have a wage advantage and not until the March 31 Executive Order had placed them on an equitable basis had they signed the United Mine Worker contract.(*) These operators, therefore, favored keeping the Executive Order intact. The Hazard, Kentucky, field made a similar claim for parity with Division III wage rates.

Smokeless Subdivisional Code Authority (Subdivison No. 1 of Division I) stated that the Executive Order was illegal because it did not conform with the Code when it specified tonnage rates.(**) Their representative pointed out that the Code originally only specified basis minimum day rates for inside skilled and outside common labor and that to establish tonnage rates would result in inequities because of differences in the amount loaded per man in various areas. He suggested that a parity in the earnings of day men and tonnage men should be the objective and stated that the N.R.A. statistical studies (Form C - Earnings data) showed that earnings in the Smokeless District were higher than in the North.

Another vigorous protest to the Code amendments was made by the Northern West Virginia operators who held that the Pennsylvania and Ohio operators had arbitrarily and without sufficient advance notice eliminated the wage differential, resulting in a complete mine shut-down and enemployment for 18,000 men. They stated that they had withdrawn from the Appalachian wage conference when they discovered that they were not being given any consideration. These operators pointed to the fact that

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(*) Gunter, L. C., ibid, supra, Vol. I, p. 151 et seq.

(**) Richards, W. A., ibid, supra, Vol. I, p. 232 et seq.

a North - South Commission to study wage differentials was proposed but that Northern West Virginia was not to be subjected to its inquiry.(*) They requested a retention of their former differential status subject to submittal of the question to an impartial commission. Representatives from Central Pennsylvania, Western Pennsylvania and Ohio (the three Code Authorities which recommended the amendments) replied to Northern West Virginia's contentions by stating that sufficient data were already at hand indicating favorable natural conditions and low production costs in Northern West Virginia which made a differential unjustifiable.

Western Kentucky indicated a willingness to accept the 7-hour day but demanded a $4.00 base rate in lieu of the $4.60 rate specified in the amendment.

West of the Mississippi River there were three major areas of discontent - Southwestern fields, Iowa and the Dakotas. The Southwestern operators pointed out that their area produced 62 per cent of the total natural gas in the country and that it consumed 57 per cent of the nation's total consumption. (**) In addition, this area was subjected to intense oil competition. These operators contended that Illinois was their largest competitor and that increased mechanization and strip mining in that State had so reduced production costs as to make impossible the wage scale specified in the amendments for the Southwest. They predicted a cessation of operation and unemployment for 16,000 miners. Iowa operators also stated that they could not pay the same wage base as Illinois and Indiana and that the restriction of working time would lead to unemployment. The Dakotas continued their objections to a shortening of working hours and stated that miners' earnings had already fallen because of specified maximum hours of work.

The foregoing details of the controversy and opposition revolving about the wage changes made by the amendment to the Code indicate the discontent which prevailed in certain areas of the industry. In general these wage rate changes represented an increase of 40 cents per day for Division I, except Northern West Virginia (64 cents) and Western Kentucky (60 cents). The basic day rates for Division II remained the same (except outside common labor in Wayne and Appanoose Counties, Iowa). In Division III (Alabama, Georgia and Southern Tennessee), the change meant as increase of $1.20 a day, while other Southern Tennessee areas (District J-1) hand an increase of 76 cents. For Division IV (Missouri, Kansas, Arkansas and Oklahoma) the wage change meant an increase of 85 cents per day.

As a result of the protests which were registered in the April 9-11,

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(*) For a complete treatment of this wage differential problem, see the following section.

(**) Shank, W. C., ibid, supra, Vol. II, p. 443 et seq.

1934 hearing, the N.R.A. issued an order which was approved as Amendment No.2 on April 22, 1934, modifying Amendment No. 1 and making such modification retroactive to April 1. The new amendment reduced the day rates to $3.80 and $2.80 in Division III (District J) and to $4.24 and $3.24 in Southern Tennessee (District J-1) so that the same wage increase over the original Code r tes - 40 cents - was applied to these areas as to all the southern producing fields (except Northern West Virginia and Western Kentucky). In the case of the southwestern fields (District G), however, the basic rates were reduced to $4,35 and $3.75 which represented increases over the original Code of 60 cents for inside skilled labor and 47 cents for outside common labor. Amendment No. 2 also specified in regard to tonnage and other piece work that increases in District B (Northern West Virginia) "shall be satisfied pending further order, by an increase per 2,000 pound ton for said District of two and one-half (2½) cents in loading rates and one-half (½) cent in cutting rate".

A continuation of objections and protests by the operators from the southwestern coal areas against the wage rates specified in Amendment No. 2 resulted in the issuance of another modifying order on June 4, 1934 (effective June 11, 1934) which became known as Amendment No. 3. This last modification set up separate basic rates for strip and deep mining operations in Division IV. The strip mines retained the same basic rates as established in Amendment No. 2, but rates for shaft, drift and slope mines were reduced 35 cents ($4.00) for inside skilled labor and 22 cents ($3.53) for outside common labor. No evidence was presented to indicate the basis upon which the wage differential between deep and strip mines was determined. It would seem that the ability to pay a certain wage in the face of existing competitive conditions rather than a study of labor costs was the determining factor in establishing the wage differential.

In issuing the modifying amendments, the N.R.A. banned destructive invasions of operators paying lower wages into markets of competitors having higher minimum rates. The ban stated that in view of the lower scales granted the districts in question and pending further study and order,

> "there shall be no sales by operators in said districts into the normal consuming markets of another district which is subject to higher rates of pay, at any prices for coal of comparable grades and quality, less than the price for such coal in said market charged by such other district, and there shall be no destructive invasion of such other consuming markets and, in the absence of satisfactory agreements governing this matter, the determination of the Administrator on complaint of any such destructive invasion shall be conclusive."

The wage question was thus tied up to the problem of competive prices and this prohibition gave rise to frequent conferences between affected groups regarding satisfactory price correlation, and where agreement could not be reached the matter devolved upon the N.R.A.

Pre-Code and Code Wage Rates

The Bituminous Coal Code established basic minimum rates which were substantially higher than those which had prevailed earlier in 1933 for all fields except where union contracts were in effect. Perhaps the most satisfactory wage rate data available (and indeed there are no other data except those reported for May, 1933 by a few subdivisions of the industry on the N.R.A. December C Form for the period prior to the Code) are those secured by the Bureau of Labor Statistics for February, 1933. In order, therefore, to compare the hourly wage rates during the Code period with those of earlier years, it is necessary to turn to the Bureau of Labor Statistics data. The data for this comparison are presented in Table XII. Since the Bureau of Labor Statistics does not make a very intensive survey for the areas west of the Mississippi River, the only bases for comparing pre-Code and Code wage rates are those few union contracts which were in effect. This latter comparison is made in Table XIII.

An analysis of the data set forth in Table XII discloses that the Bituminous Coal Code not only increased the wage rates above the 1933 level, but it also brought about a greater uniformity of wage rates by eliminating differentials which existed between competing areas. For example the Bureau of Labor Statistics found separate basic rates for the same occupation in Central and Western Pennsylvania, but the Code established one rate for the entire State. What is more, the Code applied the same rate for Ohio, Michigan and Panhandle, West Virginia and later (April 1, 1934) included Northern West Virginia. Again, in 1933 there were separate basic hourly rates in each of the fields making up the Smokeless and Appalachian area ranging from 33.5 cents to 39 cents for inside skilled labor, but the Code established a uniform rate for the entire region. Were 1933 data available for Georgia, Tennessee (Hamilton and Rhea) and Southern Tennessee, a similar change would be noted. In this regard, the N.R.A. was clearly in accord with the principles advocated by organized labor in the industry namely, that in so far as possible a status of competitive equality should be maintained, but whereever possible the same occupation should receive the same rate. With a few exceptions, which have already been noted, the N.R.A. attempted to establish a uniform basic wage rate for all areas north of the Ohio River and east of the Mississippi River and a slightly lower uniform rate for all southern producing fields. Where, however, union contract rates were in effect, as in Indiana and in Illinois, no change took place except when the working hours per day were reduced from 8 to 7, the hourly rate was proportionately increased.

Turning to the wage rate increases effected by the Code, it will be noted that the wage rates in effect from October 2, 1933 to March 31, 1934 were generally above those prevailing earlier in 1933, but were considerably lower than those of 1929. In a very general sense, it may be said that the Code established rates which were somewhat lower than the November, 1917 wage scale which prevailed in the union contracts

TABLE XII

COMPARISON OF BITUMINOUS COAL CODE HOURLY WAGE RATES WITH THOSE PREVAILING IN FEBRUARY, 1933 AND FIRST QUARTER, 1929 -States EAST OF THE MISSISSIPPI RIVER

F I E L D	Bituminous Code Apr. 1, 1934		Bituminous Code May 27, 1935		Vituminous Code Oct. 2, 1933 Mar. 31, 1934		Bureau of Labor February 1933		Bureau of Labor 1st quarter 1929	
	Inside Skilled Labor	Outside Common Labor	Inside Skilled Labor	Outside Common Labor	Inside Skilled Labor	Outside Common Labor	Inside Skilled Labor	Outside Common Labor	Inside Skilled Labor	Outside Common Labor
Pennsylvania	$.714	$0.571	$0.575	$0.450	$0.441	$0.325	$0.636	$0.496		
Central					.455	.342	.689	.520		
Western					.433	.315	.684	.481		
Ohio	.714	.571	.575	.450	.392	.343	.626	.532		
Michigan	.714	.571	.575	.450	---	---	---	---		
Panhandle, W. Va.	.714	.571	.575	.450	---	---	---	---		
Northern W. Va.	.714	.571	.545	.420	1/ .350	1/ .283	1/ .586	1/ .482		
Smokeless & Appalachian:										
Southern W. Va.	.657	.514	.525	.400	.381	.307	.573	.449		
E. Kentucky	.657	.514	.525	.400	.390	.293	.577	.444		
Virginia	.657	.514	.525	.400	.338	.260	.487	.354		
N. Tennessee	.657	.514	.525	.400	2/ .335	2/ .255	2/ .440	2/ .337		
Upper Potomac W. Va.	.657	.514	.525	.400	---	---	---	---		
Maryland	.657	.514	.525	.400	---	---	---	---		
Indiana	.655	.600	.572	.525	.577	.523	.760	.694		
Illinois	.714	.571	.625	.500	.623	.494	.762	.700		
W. Kentucky	.657	.536	.500	.375	.343	.287	.525	.422		
Alabama	.542	.400	.425	.300	.303	.196	.459	.272		
Georgia	.542	.400	.425	.300	---	---	---	---		
Tennessee (Hamilton & Rhea)	.542	.400	.425	.300	---	---	---	---		
S. Tennessee	.604	.462	.480	.355	---	---	---	---		

1/ Includes Panhandle and Upper Potomac districts.

2/ Entire State.

of 1933. Selecting some of the more important producing areas, which were not under union contract in 1933, by way of illustrating the wage rate increases during the Code period, it will be noted, for example, that the inside skilled hourly rate in Pennsylvania rose from 44.1 cents in 1933 to 57.5 cents during the original Code months - an increase of 13.4 cents or 30.4 per cent. During the amended Code months the hourly rate in Pennsylvania was further increased so that it was 71.4 cents or 62 per cent above the 1933 level. Inside skilled labor gained even more in Northern West Virginia, where the 1933 hourly rate of 35 cents was increased to 54.5 cents or 55.7 per cent during the original Code period. The Northern West Virginia inside skilled hourly rate was further increased after April 1, 1934 to 71.4 cents or 104 per cent above the 1933 level. This wage rate increase, arising out of the elimination of the differential, explains the opposition of Northern West Virginia to the Amended Code.

In the southern producing fields similar wage rate increases may be noted. For example, the inside skilled rate in Southern West Virginia increased 37.8 per cent during the early Code period over the 1933 level and for the amended Code period, the indrease amounted to 73.4 per cent. This inside skilled hourly rate in Northern Tennessee for the same periods increased 56.7 per cent and 96.1 per cent. The Alabama rates for the same occupation increased 40.2 per cent in the first Code period and even after the modifying amendments the increase amounted to 78.9 per cent over the 1933 rate.

The data presented in Table XIII indicate clearly the N.R.A. wage rate procedure with reference to those areas having union wage agreements. It will be noted that in every instance the basic hourly rates for both inside skilled labor and outside common labor specified in the union contracts were either unmolested or changed very slightly by the Code during the period of October 2, 1933 to March 31, 1934. During the months when the amendments were in effect (April 1, 1934 to May 27, 1935) the basic hourly rates were increased in all the western areas primarily because of the shortening of working hours in the day, but in the Southwestern States, New Mexico and Colorado, the day rates as well as the hourly rates were increased. In Wayne and Appanoose Counties, Iowa, only the day rate for outside common labor was increased by the amendment. For those areas where the day rate remained the same, the shortening of the work day meant an increase of approximately 14.3 per cent in the hourly rate. But in the Southwestern fields, even after the modifying amendment inside skilled labor in deep mines received an increase of 21.8 per cent and in the stripping operations the increase amounted to 32.5 per cent.

TABLE XIII

COMPARISON OF BITUMINOUS COAL CODE HOURLY WAGE RATES WITH UNION CONTRACT RATES IN EFFECT IN 1933 AND 1929 IN STATES WEST OF THE MISSISSIPPI RIVER

F I E L D	Bituminous Code April 1, 1934 Inside Skilled Labor	Bituminous Code April 1, 1934 Outside Common Labor	Bituminous Code May 27, 1935 Oct. 2, 1933 Mar. 31, 1934 Inside Skilled Labor	Bituminous Code May 27, 1935 Oct. 2, 1933 Mar. 31, 1934 Outside Common Labor	Union Contract Rate, 1933 Track-men	Union Contract Rate, 1933 Outside Common Labor	Union Contract Rate, 1929 Track-men	Union Contract Rate, 1929 Outside Common Labor
Iowa (Wayne & Appanoose)	$0.651	$0.571	$0.5700	$.04325	---	---	(	
Iowa (except Wayne & Appanoose)	.671 5/	.571 5/	.5375	.5000	$.0587	$.0.500	($0.725	$0.6475
Missouri	.571 5/	.504 5/	.4687	.4100	.469 1/	.409 1/	.625	.545
Kansas	.571 5/	.504 5/	.4687	.4100	.469 2/	.409 2/	.6375	.545
Arkansas	.571 5/	.504 5/	.4687	.4100	.469 3/	.389 3/	----	---
Oklahoma	.571 5/	.504 5/	.4687	.4100	.469 3/	.389 3/	----	---
New Mexico	.728	.586	.5600	.4687	---	---	----	---
Southern Colorado	.728	.586	.5550	.4687	---	---		
Northern Colorado	.750	.607	.6250	.4637	4/	4/	(.375	.569
Utah	.777	.640	.6300	.5600	---	---	---	---
Southern Wyoming	.775	.635	.6775	.5550	.677	.550	.340	.736
Northern Wyoming	.775	.649	.6775	.5675	.677	.5675	.340	.7437
Montana	.805	.689	.7037	.6025	.725	.603	.899	.800
Washington	.771	.571	.6750	.5000	.675	.500	.844	.625
North Dakota	.643	.529	.5000	.4000	---	---	---	---
South Dakota	.643	.529	.5000	.4000	---	---	---	---

1/ Exclusive of Randolph, Macon and Adair Counties. Contract of Southwestern Interstate Coal Operators' Association and Ray and Clay Counties Operators' Association.

2/ Cherokee and Crawford Counties.

3/ Contract of Arkansas-Oklahoma Coal Operators' Association.

4/ Rocky Mountain Fuel Company's rate is $0.6563 for trackmen and $0.50 for outside labor.

5/ These rates were for all shaft, drift or slope mines. The stripping rates were 62.1 cents and 53.6 cents - Amendment No. 3.

Late Code and Post Code Labor Developments: The increasing number of sales of coal at prices below the Code levels plus the growing general non-compliance and lack of enforcement of Code provisions during the latter months of 1934 gave rise to considerable dissatisfaction among the United Mine Workers. Organized labor viewed violations of Code prices and consequent lowering of mine realizations as a real threat against continued observance of contract and code wages. John L. Lewis sent a letter on December 17, 1934 to the Divisional Administrator, Wayne Ellis, pointing out that:

> "Large groups of producers are most flagrant in their studied violations of the trade practices and price regulations of the Bituminous Coal Code ... An extra-ordinary volume of coal is being sold out of code prices through the medium of spurious contracts and throughout the practice of mutilating dates and price provisions in valid contracts... In addition, large scale tonnage is being contracted for delivery subsequent to the date of legal expiration of the National Recovery Act at prices amazingly below code ..."
>
> "You are aware that the approved minimum price structure of the bituminous coal industry is irrevocably correlated with the wage structure, as set forth in the collective bargaining agreements of the industry and approved as to their minimum rates and hours by the President."...
>
> "It is incontestable that the deliberate wrecking of the approved price structure of the industry places the wage structure in jeopardy. The United Mine Workers of America do not propose to endure such jeopardy resulting from a breach of faith between the coal operators and the National Recovery Administration and which, in fact, amounts to a breach of contract with the United Mine Workers of America...."
>
> "It is imperative that the National Recovery Administration act at once.....Among other things, the United Mine Workers of America suggest an immediate meeting of the National Bituminous Coal Industrial Board, the obligations of which are outlined in Section 4, Article VII, of the Bituminous Coal Code. This Board has had only one meeting during the life of the Code."

A meeting of the National Bituminous Coal Industrial Board began on January 3, 1935 to consider the serious situation which had developed in the prices and marketing of bituminous coal and to make recommendations looking toward an improvement of the conditions in the industry. Again at this meeting, Mr. Lewis, who was a presidential appointee to the Board, stated:

> "... if through the inefficiency of the industry itself and its leadership, the price structure is to fall, then I may say to you that the United Mine Workers consider that it is an intrusion and a breach of the contract itself, and the interests I represent do not now or later (intend) to idly sit by and see that intrusion perpetrated, and see the wage structure breached, without serving notice as it now does, formally and on the record of this meeting, that it will take any necessary steps to

> preserve the integrity of these wage contracts and to impress upon the leaders of the bituminous coal industry and the representatives of the National Recovery Administration the imperative necessity of making good the commitments of the industry and the government." (*)

Mr. Lewis stated that the mine workers' organization was willing to cooperate with the operators in every way to strengthen observance of code prices. He pointed out that in the past the operators had not been willing to concede labor representation in the councils of the industry. Mr. Lewis formally requested that the N.R.A. provide ways and means whereby a representative of the United Mine Workers might have a right to sit and vote on the Code Authorities. (**) The motion was subjected to a vote of the Board and was defeated 8 to 7. Mr. Lewis indicated that if the resolution were not adopted, he considered the crisis in the industry sufficiently important to take the matter to the National Industrial Recovery Board and to the President himself. Again at a meeting of the National Bituminous Coal Industrial Board on January 11, 1935, Mr. Lewis moved the adoption of an Amendment to the Bituminous Coal Code to read as follows:

> "An Amendment to Article 7, Section 2, after the word 'membership' on line 12, as follows:
>
> "All Code Authorities, divisional or subdivisional, shall have as a member thereon a representative of the accredited and recognized organization of employees." (***)

This resolution was subjected to a vote and was adopted 10 to 4 (one member of the Board not present). Several operator representatives and presidential members had changed their opinions since the meeting of January 4, 1935.

The N.R.A. sent out on February 2, 1935, a formal notice of an opportunity to be heard on amending Article VII, Section 2, second sentence to provide labor representation on all divisional or subdivisional Code Authorities. On March 14, 1935, the N.R.A. announced approval of the recommendation submitted by the National Bituminous Industrial Board for labor representatives on Code Authorities. This approval took the form of Amendment 7 to the Bituminous Coal Code, which read as follows:

> "Delete the period of the second sentence of Sub-Section (a) of Section 2, Article VII, and substitute therefor a semi-colon, and add after such semi-colon the following:
> Provided each Code Authority, Divisional or Subdi-

(*) Meeting of National Bituminous Coal Industrial Board, January 3, 1934, Vol. I, p. 116.

(**) Ibid, supra, January 4, 1935, Vol. II, pp. 379-388.

(***) Meeting of National Bituminous Coal Industrial Board, January 11, 1935, p. 34.

visional, shall have one member thereon who shall be selected from nominations submitted by the accredited and recognized organization of employees".

In this way organized labor in the bituminous coal industry secured the long sought objective of labor representation in groups of operator members. While the amendment represented a gain in the prestige of union organization among the mine workers, it had no real economic significance in the affairs of the industry. The amendment did, however, indicate the influence and power of the United Mine Workers in the bituminous coal industry. Early in January, 1935, of 775 approved basic and supplementary codes in operation, no more than 26 allowed for labor representation on the Code Authority. (*) The clothing codes represented the most important group (15 codes) giving such labor representation. The bituminous coal code through Amendment 7 made a great addition to the total number of employees in the United States having representation on Code Authorities.

The Appalachian Wage Agreement of April 1, 1934 provided for a joint conference of operators and mine workers to be held in Washington, D. C., February 18, 1935, "to consider what revisions, if any, shall be made in this Agreement as to hours, wages and conditions of employment, and to establish such differentials between districts as the Conference finds in the report of the Joint North-South Differential Commission". This conference began on the scheduled date despite rumors of postponement arising out of the fact that a Senate Sub-Committee was to begin hearings on February 19th on proposed coal legislation.

The United Mine Workers originally proposed that the operators agree to the following program:

1. Six-hour day and thirty-five hour week.
2. Increase of 15 cents per ton on combined cutting and loading rates.
3. Increase of 50 cents per day to all outside and inside day wage men.
4. Increase of 25 cents per day on all pick mining rates.
5. Increase of 20 per cent on all yardage and deadwork.
6. Time and one-half for overtime; double time for Sundays and holidays.
7. Elimination of inequitable differentials in and between districts.

The operators on February 20th rejected the mine workers' demands except that pertaining to wage differentials. They made a counter proposal to the effect that a wage agreement be signed to be effective from April 1, 1935 to March 31, 1936 and that no changes be made in wages except where inequitable differentials were eliminated or in hours of work per day and week except when changed by legislative action. This proposal

(*) Lyon, Leverett S. et al., The National Recovery Administration, An Analysis and an Appraisal, The Brookings Institution, 1935, p.459.

was rejected by the miners. The operators expressed considerable anxiety as to what might happen to the Thirty-Hour Week Bill, the Guffey Coal Bill, and the President's Message on N.R.A. The existing situation resulted in the adoption of a resolution that the conference be adjourned until March 11, 1935.

When the joint conference reconvened, the operators reiterated their position. Differences of opinion developed among the operators as to whether Northern West Virginia was a part of the northern coal producing areas. Operator representatives from Eastern Pennsylvania, Western Pennsylvania, Ohio and Panhandle claimed that Northern West Virginia had foregone its claim to inclusion with northern operators when it had refused to sign the Agreement of 1934. It was suggested that the conference be recessed until after a consultation with United Mine Worker officials. After this recess, Charles O'Neill of Eastern Pennsylvania offered the following resolution which was seconded by Phillip Murray of the United Mine Workers:

> "It is moved that the joint scale committee be set up with equal voting power as between northern and southern districts outside of Northern West Virginia; that Northern West Virginia be given representation on the scale committee but with the understanding that on all votes Northern West Virginia shall be polled last; that in the event of a tie vote between the northern operators and southern operators, then Northern West Virginia shall not vote nor record any opinion on the issue then under consideration; provided that Northern West Virginia shall be entitled to vote and have its vote recorded and counted on all matters pertaining exclusively to the Northern West Virginia district whether a tie vote exists or not; provided, further, that this shall be adopted as a rule of this Convention but that nothing herein contained shall affect the unit rule already adopted by the Convention."

The resolution was adopted and the general conference was adjourned subject to the call of the Joint Wage Scale Committee. The Committee continued in constant session without arriving at an agreement.

As the expiration date (April 1st) of the Appalachian Agreement approached, it became increasingly important that some agreement be reached. Neither the Administration nor the Industry looked with favor upon a shut down of mining operations. Mr. Richberg, Chairman of the National Industrial Recovery Board, invited a sub-committee of the Joint Scale Committee of operators and miners to meet with him on March 28th for the purpose of discussing with him and the Board the problems of the wage conference. The Board extended its good offices to the conference in the hope of bringing about an amiable settlement of differences between operators and mine workers.

At the conference of the Joint Wage Scale Subcommittee and the National Industrial Recovery Board, Mr. Richberg proposed to issue an

order March 30th extending all wage provisions of the existing coal code until June 16th (expiration date of the N.I.R.A.) The proposed extension was also to apply to certain unfair trade practices which expired after April 1st. It was stated that the N.I.R.B. proposal was a suggestion and not an ultimatium and if operators and miners were willing the proper procedure would be for the operators to make such application to the N.R.A. Arrangements were made for the entire Board and the Joint Scale Committee to meet again.

On March 30, 1935, the operators and miners announced an agreement to extend the provisions of the existing wage contract until June 16, 1935. Representatives from all districts in the Appalachian Agreement signed the new agreement except Southern Appalachian and Harlan. Meantime, operators along with others sought to secure an extension of the N.I.R.A. for a two-year period. It was hoped that by the expiration date of the new wage agreement, the question of new legislation would be settled.

The National Industrial Recovery Board on March 30, 1935 issued an order which became effective as Amendment 8 to the Bituminous Coal Code. This Amendment stated:

> "Add a new sentence to, immediately to follow the present provision of, and to become a part of, Article XI to read as follows:
>
> 'This Code and all the provisions thereof, despite any provisions to the contrary contained therein and especially, but without limitation to, those provisions of Articles IV, VI, and VII providing for a time limitation upon the affect of such provisions or any of them, which may provide that the effect of such provisions or any of them shall terminate prior to June 16, 1935, shall remain effective to and including June 16, 1935."

The Joint Scale Committee continued its efforts to secure a more permanent agreement without success. On April 9, 1935, the Southern Appalachian Coal Operators Association withdrew from the Joint Conference. Meantime, the Bituminous Coal Unit of the N.R.A. was ordered to engage in a rush program of securing cost of production data on Form A for the period April, 1934 through January, 1935. Efforts to secure Congressional action on the Guffey Coal Bill were going forward.

The Joint Wage Conference postponed its work from one date to another and finally met on May 20, 1935. During the course of ensuing meetings, the Conference seemed unable to reach an agreement. The news of the U. S. Supreme Court decision in the Schecter Case, declaring the N.I.R.A. unconstitutional, on May 27, 1935, resulted in the Joint Wage Conference adjourning sine die. At this last meeting, John L. Lewis offered the following resolution which was adopted:

> "Resolved, That in the event no wage agreement has been negotiated before the date of expiration of the exist-

ing agreement, that the Joint Conference authorize the continuance of work by all necessary maintenance men, provided that such men shall be paid the present wage for their services in their respective classifications plus any increase or adjustment that may come in the working out of the base agreement, which shall be retroactive as effecting these men as of June 17, 1935. All details affecting the application of this arrangement shall be adjusted by representatives of the United Mine Workers of America in the respective districts."

Mr. Lewis refused to consider any suggestion that separate district agreements be made. Once again a nation-wide shut down of mining operations seemed imminent.

At the invitation of President Roosevelt, John L. Lewis (U.M.W.), D. C. Kennedy (operators), Senator Guffey, Representative Snyder and Major George Berry (N.R.A.) attended a conference at the White House on June 14, 1935. As a result of this conference, the existing wage agreement was extended to June 30, 1935. When this new extension was about to expire (June 29, 1935), the Secretary of Labor transmitted to the operator and mine worker representatives a request that the contract be again extended for 30 days (August 1st). This proposal was accepted by the Joint Wage Conference.

It was apparent that both mine workers and operators were looking toward the enactment of the so-called Guffey-Snyder Coal Bill. A Subcommittee of the House Ways and Means Committee held hearings on the Bill from June 17-28, 1935. A revised and redrafted Bill (H.R. 8479) was not reported back to the full Committee until July 30th. Meantime, President Roosevelt once more transmitted a request through the Secretary of Labor to the Joint Wage Conference that the contract be extended to September 16th. Again the Conference complied with the request. The House Ways and Means Committee on August 12, 1935 amended and approved the coal regulation bill (number changed to H.R. 9100). The bill was passed by the House on August 19th and after amendment was passed by the Senate on August 22nd. After a conference of House and Senate conferees, the bill was sent to the White House on August 23rd and finally signed by the President on August 30th.

The Joint Wage Conference met several times without success but on September 14, 1935 agreed to extend the wage contract to September 22nd after intervention of Assistant Secretary of Labor McGrady. At this meeting the United Mine Workers offered a new proposal:

1. Continuation of the 7-hour day and 35-hour week.
2. Increase of 50 cents per day on all day and monthly men.
3. Increase of 10 cents per ton on combined cutting and loading rates.
4. Increase of 10 cents per ton on pick mining rates.
5. Increase of 15 per cent on yardage and deadwork.
6. Same increase given to handloaders to be given to men employed on machine loading and other mechanical devices and on stripping

operations; to be worked out in district conferences.

7. One-year contract, expiring September 16, 1936.

When the Wage Conference again met on September 21st, complete disagreement was reported. Assistant Secretary McGrady intervened and asked that the Conference reconvene. The operators came forward with a proposal which accepted the union demands on all points except that 6 cents per ton increase for tonnage men (rather than 10 cents) was offered, 10 per cent increase on yardage and deadwork (rather than 15 per cent), and a contract to run until April 1, 1937. The mine workers refused to accept the operators' proposal. Four days later, John L. Lewis stated that the miners would be willing to accept the operators' program except that the tonnage rate increase be 9 cents per ton. Meantime, however, the United Mine Workers went out on strike (contract expired September 22nd) and a nation-wide shut down followed. Only the Progressive Miners and a few non-union mines continued to operate.

The strike ended with the signing of a new Appalachian Wage Agreement on September 27, 1935. The wage contract granted an increase of 50 cents per day to all day and monthly men, 9 cents per ton on combined cutting and loading rates, 9 cents per ton on pick mining rates, an increase of 10 per cent on yardage and deadwork, seven-hour day, thirty-five hour week to apply and contract to run until April 1, 1937. Four districts did not sign the Appalachian Agreement - Southern Appalachian, Hazard, Virginia and Harlan. Southern Appalachian and Harlan districts were not present and Hazard and Virginia refused to sign pending action of these districts. Most of the coal producing areas, outside of the Appalachian Conference, accepted the wage increases in the new agreement and resumed work. Michigan, Alabama and Southern Appalachian areas, however, were not working even by October 12, and not until November 1 did the 9,000 eastern Tennesee and southeastern Kentucky miners return to work. Alabama did not reach an agreement until November 17, 1935. The Alabama contract is interesting in view of the fact that the wage increases granted were less than 50 per cent of those for the rest of the country. Day and monthly men received an increase of 20 cents per day, tonnage workers received a 4½ cents per ton increase, and yardage and deadwork rates were increased 5 per cent.

Working Time and Labor Costs Under the Code: The Bituminous Coal Coal Code in setting up standards of maximum hours of work and minimum rates of pay sought to effectuate the ultimate objectives of the N.I.R.A.- greater employment and increased purchasing power. The establishment of the 8-hour day for the entire industry did not represent a radical change. With the possible exception of certain of the southern producing areas where the "cleanup" system was in effect and men worked 9, 10 or even more hours per day, the industry generally was already operating on the basis of an 8-hour day.

If is difficult to draw any definite conclusions as to the effects of Code hours on output per man per day or on labor costs and total costs of production. The Bureau of Mines reports only annual figures on the productivity per man per day. Thus the 1933 figures are made up of 9 pre-Code months and 3 months under the Code, while the 1934 figures contain 3 months of 8-hour day operation and 9 months of 7-hour operation.

These figures do not, therefore, accurately reflect changes in working hours. Similarly, no data regarding labor costs or total costs of production were available for the period immediately preceding the adoption of the Code. As to the effect on employment only rough approximations based upon the Bureau of Labor Statistics index or the Bureau of Mines' reports are possible.

Unfortunately, no accurate information can be secured which shows the average hours per week that employees worked in the various mining areas. Operating companies rarely keep accurate records of the actual hours worked, especially of tonnage men who comprise approximately two-thirds of the working force. The nearest approach to the working time afforded employees is the number of days (starts) mine tipples operated. By assuming that the tipple operated according to the standard hours of work per day an estimate of hours of tipple operation may be secured. It must be remembered that such data indicate the working hours of the mines rather than that of the men.(*) The lack of satisfactory working time data is regrettable because such data are essential to a proper evaluation of the factors entering into the controversy concerning reduction of hours in the work day and week.

The change from the 8-hour day to the 7-hour day in the bituminous coal industry was undoubtedly accompanied by numerous readjustments. The exact effects of the shortening of the work day are, however, unknown. A reduction in the number of working hours per day might supposedly be reflected in decreased output, but on the other hand, the operating company could add more employees to its payroll, install new mechanical devices such as loading or cutting machines, or improve its underground haulage ways and transportation facilities. Any one of these factors would tend to offset the decrease in working time. Again, output cannot serve as a satisfactory reflector of changes in working hours because of fluctuations in market demand. It is rather clear that miners working regularly and continuously supplying a steady market have better tonnage records than when the work is intermittent. Much, too, depended upon the managerial policy displayed by the operating company. Where a company failed to furnish work for all its men every day when consumer demand permitted because of poor mine lay-out, cutting insufficient number of rooms, and shortages in mine cars, a reduction in working hours per day would require better planning or else the operating company would fall by the wayside in the competitive struggle. Likewise, a company which was lax in its policy toward absenteeism on the part of its men could offset reduced hours by a more stringent and disciplinary program. In these instances, therefore, lower maximum working hours might not result in decreased output, but on the contrary could bring about greater efficiency.

Those companies, on the other hand, whose operations were already highly mechanized or whose program was well planned and efficient with mine lay-outs, etc. based upon an 8-hour day, undoubtedly faced greater hardships when the maximum hours per day were reduced. Since such companies were already making effective use of their men, equipment and resources, opportunities for further extensive improvements were lacking.

(*) For a discussion of working time in the industry see sections on "Seasonal and Cyclical Fluctuations in Employment" and "Movement for Shortening the Work Day and Week".

It is conceivable that under these circumstances a company faced with a shorter work-day might find its operating efficiency impaired, its output lowered and its labor costs disproportionately increased. If the company were readily well managed, however, these difficulties would be only temporary or while the readjustments were taking place. Once the mining operations were rearranged to fit into the shorter workday, the company would again appear relatively superior to its competitors.

It is safe to say that highly efficient operating conditions were not prevalent throughout the coal industry. Since room for improvement was extensive, insofar as the shorter workday served as a stimulus to greater efficiency, the industry benefitted from better coordination of man power, technical equipment and natural resources. It does not follow that the reduced work day operated to bring about a more intensive use of the factors of production throughout the entire industry. Nor can any definite answer be given as to whether the industry could stand a further reduction in working hours. Some well informed operators have taken the stand that the "slack" in the industry has been taken up and that a further reduction in working time would result in considerable distress, mine shutdowns and excessive increases in production costs. Organized labor, however, holds that 6-hour day and 30-hour week would result in greater employment with no untoward effects upon the operators.

It is significant to note that in a large measure the inability to make any estimates or predictions regarding the effect of a further shortening of the work day grows out of the lack of necessary statistical data for costs, employment, working time and earnings. Thus, for example, a careful analysis of the contentions made by operators in some areas such as Iowa, North Dakota, and South Dakota cannot be made because supporting statistical data are lacking. These operators state that restriction of working time in their areas results in lowered employment and reduced earnings because they operate under highly seasonal conditions, producing low quality coals (lignite; friable and high moisture content) for a primarily domestic market and that the working force is made up of part-time miners who are really neighboring farmers. While neither the tonnage nor the number of men employed is large in these areas, the problem has given rise to considerable controversy.

Indicative of the variety of opinion existing among operators regarding the shortening of working hours are some of the following excerpts. The Chairman and operator representative of the Panhandle, West Virginia Subdivisional Code Authority made these significant remarks:

> "The primary purpose of the National Industrial Recovery Act, and which I think to some extent we in the industry have at least temporarily lost sight of, is to increase employment. Generally speaking this cannot be brought about in our industry in any other way than by shortening of the maximum working hours ...."

> "Experience during the past seven or eight months has shown that reduction in daily working hours, and in some cases even weekly working hours, does not necessarily result in a corresponding reduction in tonnage produced, the percentage of reduction in productive capacity being a great deal

less than the percentage of reduction in working hours.

"In the case of mines operated by some of the companies I represent where prior to the NRA we were operating on a clean-up system which kept some of our men working for 10, 12 and even as as much as 14 hours per day, we have found that on an 8-hour day not only do we not produce less tonnage per day with the same number of men but as a matter of fact, we are actually producing a greater tonnage in some mines. We have found since the adoption of the 8-hour day that it would not be necessary to work 10 or 12 hours per day only for the company's own delinquencies. We found that the trouble was with our underground transportation system and that after we speeded up this system our men in some of the mines are producing more coal in 8 hours than they previously did in the 10 and 12 and longer hour day." (*)

The speaker, in making the foregoing statements, proposed that the industry establish a basic 30 hour week.

An operator representative appearing on behalf of the Rocky Mountain - Pacific Coal Association viewed a further limitation of working hours in an entirely different light. (**) He contended that his area (Division V) required the maintenance of the 8-hour day and a restoration of the right to work a maximum of six days per week during the brief peak demand when orders for coal were available. In addition to the seasonal factor, this speaker pointed out the increasing competition from substitute fuels and energy and stated that this industry could not bear the burden of increased costs resulting from a reduction in working time. He held that mine labor would be the ultimate victim because of lowered earnings. This western representative pointed out that a reduction of one hour from the established work day of 8 hours represented a reduction of 12.5 per cent, while if the daily rate would be increased 14.3 per cent; and if the work day were reduced by two hours or 25 per cent, the hourly wage rate would be increased 33.3 per cent. Shortening the work day, according to this operator, would defeat the desired objectives of increased earnings and employment because it would make competition with other fuels more difficult; create extraordinary costs where thin seams and other difficult mining conditions required much labor; and it would concentrate production in mines requiring a minimum of labor such as stripping operations where labor could be displaced by machines or low cost mines where the seams were thick and flat.

When it is remembered that the mining operations in Division V were generally among the most highly mechanized and that the mine management policy was quite efficient, a change in the working hours schedule might result in considerable hardship. Moreover, the working force in the western states comprised a large percentage of men paid on a day basis, contrary to the industry generally, and a reduction in hours per

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(*) Taylor, William, Bituminous Coal Industry Conference on Wages and Hours, March 26, 1934, Vol. 1, pp. 496

(**) McAuliffe, Eugene, ibid, supra, pp. 26-62

day meant a rise in the hourly rate without nedessarily any increased efficiency. (*) A change in the number of hours per day affects a time worker more than a pieceworker. Tonnage men do not work a specified number of hours, being more concerned with output which determines their pay, but day men benefit from a reduced work day without having any incentive to improve their output. A similar situation applies to machine men when paid on a time basis.

The Northern West Virginia Subdivision Code Authority published statistical data tending to indicate that the reduction in working hours per day from 8 to 7 effected a decrease of approximately 5 per cent in the out-put per man-day in contrast to the 12.5 per cent decline in [illegible] working time. (**) An analysis of the effect of the 7-hour day on productivity made by the Smokeless Code Authority arrived at approximately the same conclusions.

The Rocky-Mountain-Pacific Coal Association completed a study in February, 1934, based upon questionnaires sent to operators, which attempted to calculate the cost increase resulting from the application of both a 7-hour and 6-hour day to the coal industry in Division V. (***) These calculations covered 79.7 per cent of the tonnage mined in 1932 (approximately 90 per cent of the 1933 tonnage). The results of this study are set forth in table XIV. According to the evidence presented in this table, the estimated cost of shortening the work day from 8 to 7 hours was 23.76 cents per ton or for the reported tonnage a total of $3,671,330. If the work day and work week were reduced to six hours per day and thirty hours per week, the cost of production would be further increased 26.03 cents per ton or $7,698,939 for the tonnage reported by the operators.

The proportion which labor costs contributed to the estimated increase in production costs resulting from the shortening of the work day may be noted in Table XV. According to estimates made, labor costs (exclusive of supervisory and clerical) would increase 15.54 cents per ton or $2,401,255 when the working hours were reduced to seven per day. A further reduction to the 6-hour day would result in an increase of 34.98 cents per ton or $5,405,037. Thus, according to these estimates labor

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(*) The NRA Form C reports on employment and earnings for Nov. 1 - 16, 1933, showed that approximately 60 per cent of the men in Division V were paid on a time basis (Northern Wyoming and Montana employed a negligible number of tonnage men) while Bureau of Labor Statisticts surveys have found that approximately 66 2/3 per cent of the men studied in the eastern areas were tonnage men.

(**) Northern West Virginia Subdivisional Code Authority, "Compilation of Statistical Data covering Period October 1, 1933 to March 31, 1934", p. 106; and Supplement No. 1 (May to October, 1934) p.87.

(***) Brief of Coal Operators Located in Division V of the Code of Fair Competition for the Bituminous Coal Industry, for Restoration of the Eight-Hour Day and the Privilege of Working Six Days Per Week When Work is Available, November 10, 1934.

TABLE XIV

Calculated Increases in Cost of Production Resulting from a Shortening of the Work-Day to Seven Hours and to Six Hours (*) (Assuming hourly and tonnage rates remain unchanged)

State	Questionnaires Received	Tons Mined, 1932	Tons reported on Questionnaires	Per Cent 1932 Tonnage	Increased Cost of Seven-Hour Day		Increased Cost of Six-Hour Day	
					Per Ton	Amount	per Ton	Amount
Colorado	41	5,598,721	4,493,477	80.3	$ .2904	$1,304.536	$ .5994	$2,693,475
Wyoming	14	4,170,963	4,029,828	96.6	.1903	766,765	.4133	1,665,388
New Mexico	7	1,263,386	1,194,329	94.5	.2767	330,480	.6020	719,038
Utah	12	2,852,127	2,447,981	85.8	.2395	586,335	.4810	1,177,371
Montana	9	2,125,225	1,901,974	89.5	.1505	286,320	.3220	612,511
Washington	8	1,591,426	1,243,249	78.1	.2979	370,398	.6239	776,515
North Dakota	4	1,739,658	140,043	8.1	.1893	26,496	.3530	49,441
South Dakota	0	49,074	------	---	----	------	----	------
Total	95	19,390,580	15,450,881	79.7	$ .2376	$3,671,330	$ .4979	$7,692,939

(*) Brief of coal operators located in Division V, etc., op. cit. p.

TABLE XV

Calculated Increases in Costs of Day Labor and Tonnage Rates Resulting from a Shortening of the Work Day to Seven Hours and to Six Hours. (*)

(Assuming hourly and tonnage rates remain unchanged)

State	Increased Costs of Seven-Hour Day				Increased Costs of Six-Hour Day			
	Day Labor		Tonnage Rates		Day Labor		Tonnage Rates	
	Per Ton	Amount	Per Ton	Amount	Per Ton	Amount	Per Ton	Amount
Colorado	$ .0835	$ 375,278	$ .0943	$ 423,696	$ .1812	$ 813,792	$ .2122	$ 953,546
Wyoming	.1082	435,564	.0159	64,016	.2499	1,006,855	.0365	147,140
New Mexico	.0787	93,889	.1225	146,363	.1860	222,151	.2839	338,911
Utah	.1087	266,223	.0473	115,707	.2339	572,531	.1065	260,762
Montana	.0865	183,255	.0039	7,453	.2212	420,438	.0078	14,905
Washington	.1433	178,321	.0780	94,499	.3172	394,343	.1361	223,806
North Dakota	.0570	12,179	.0344	4,812	.1776	24,871	.0781	10,936
South Dakota	. --	---	--	---	---	---	--	---
Total	$ .1000	$1,544,709	$ .0554	$ 856,564	$ .2236	$3,455,031	$ .1262	$1,950,006

(*) McAukliffe, Eugene (on behalf of Rocky Mountain*Pacific Coal Association), Bituminous Coal Industry Conference on Wages and Hours, March 26, 1934, Volume 1, pp. 44 and 45.

costs (day labor and tonnage rates) represented 65.4 per cent of the increased cost of production resulting from a change to a 7-hour day and 70.3 per cent of the increased cost when work hours per day were reduced to 6. It is interesting to note also that the increased costs of day labor represented approximately 64 per cent of the increase for all labor costs (exclusive of supervisory and clerical) when the working hours were reduced. In this latter regard, it will be noted that Washington, Utah and Montana made the largest contributions to the increase in costs of day labor.

The Rocky Mountain-Pacific Coal Association study stated:

> "The results submitted (discussed above) were most carefully audited and checked by those in charge of the compilation, and have been found, in the light of the increases sustained during the months April to September, 1934, to be over-conservative, such increases as have been reported, fully equal to or in excess of the figures shown in the compilation of February, 1934."

Unfortunately, Division V did not report cost of production data to the NRA for the period covering the 7-hour day so that the estimated labor costs arising from the shortened day set forth by the study cannot be verified.

The operators in Division 111 issued a report pointing out the situation which had developed in the bituminous coal mining industry in Alabama, Southern Tennessee and Georgia after the Code Amendments. (*) According to this report:

> "The nine months experience from April 1, 1934 to December 31,1934 has proven the impossibility of the survival of the industry under the 7-hour day and $2.90-$3.80 wage scale. The commercial producers of Alabama, realizing the imperative need to adjust their operations to meet the shorter hours, worked earnestly and to the full extent of their financial means to the end of reducing costs without disemployment of labor. Daily production dropped 12 per cent from 32,100 tons average for 70.8 8-hour days to 28,300 tons average for 131.4 7-hour days; average tons per man day dropped from 3.60 for the year 1932 to 3.26 for the year 1933, to 3.0 (estimated) for the 8-hour period 1933-1934, and to 2.7 (estimated) for the 7-hour period April - December 1934; costs increased from $2.00 per ton to $2.33 per ton; and realization increased from $1.94 per ton to $2.29 per ton - lacking four cents of meeting the cost of production." (**)

(*) Report of the Situation of the Bituminous Coal Industry of Division 111, March, 1935 - Alabama Mining Institute, Southern Tennessee Coal Producers Association, Tennessee-Georgia Coal Producers' Association.

(**) Ibid, supra, p. 4

The operators in this Division of the industry strongly opposed any further reduction of working hours per day. In referring to the six-hour day these operators stated that Alabama coal mine employees were recruited mainly from the farming section and until the advent of the NRA were accustomed to a 9-hour work day. The decrease of working time to 8 hours and later to 7 hours per day, it was claimed, had removed all inefficiencies leaving little opportunity for further improvement. The operators also pointed out that the shortened work day had subordinated safety to the need of doing in 7 hours what formerly had required 9 or 10 hours so that the 1934 fatality rate (3.12 per million tons) had increased 25 per cent over 1933 and 40 per cent over 1932. As further evidence of the effect of the speeding up process on safety, it was stated that whereas haulage fatalities were only 11 per cent of the total fatal accidents in 1932 and 32 per cent in 1933, in the year 1934 they represented 34 per cent of the total.

The only statistical approach to an analysis of the effect of the reduction in working hours from 8 to 7 per day upon the labor costs lies in the cost of production data (Form A) reported to the NRA from November, 1933 through January, 1935. (*) The reported information covered various costs incident to production and so necessarily treated labor costs, but the schedules were not drawn up for the particular purpose of securing detailed data relating to the labor costs. The total mine labor costs was made up of four cost groups - daymen, mine (piece and day workers), yardage and deadwork, and mine supervisory and clerical. The data submitted showed the total tons produced, number of days tipple started, and number of mines reporting. Amounts paid out to each of the labor cost groups and the cost per ton for each reported. While this information was valuable and more satisfactory than any previously available data, it lacked certain details essential to a proper evaluation of labor costs. Originally the NRA had set up a statistical program which provided for the reporting of employment and earnings data (Form C) and which operated for three pay periods (two weeks) from November 16, 1933 to December 15, 1933. A variety of factors contributed to the discontinuance of this portion of the statistical reporting. (**)

As a result only the Form A data are available for any considerable length of time extending over the 8-hour and 7-hour periods. Unfortunately these data do not indicate the number of employees engaged in each occupation, the actual working time of each employee for specific occupations, individual earnings per start and pay period for various occupational groups, and the degree of mechanization. It is, therefore, difficult to accurately evaluate the extent to which the shortening of the

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(*) Chapter V treats these cost data in considerable detail for various sections of the industry. The statistical procedure of compilation, editing, etc., are discussed elsewhere.

(**) The data reported relating to employment and earnings and the controversy centering around this program are discussed elsewhere in this study.

work day resulted in the expressed objectives of increased employment and earnings. However, insofar as labor costs per ton were increased during the period of reduced working time per day, it is reasonable to assume that a large proportion of the increased costs went to mine workers. It does not follow that the increased costs arose only out of the shortened work day, since in many portions of the industry basic day rates and tonnage rates were also increased. In those areas where basic wage rates were increased, it is impossible to determine what portion of the increased labor costs should be allocated to reduce working hours and what portion may be attributed to increased rates.

Any comparisons of labor costs per ton that are made between areas or for different periods should properly give consideration to the average number of days mines operated in the respective areas or periods. It should be kept in mind that as the number of working days per month increases, labor costs per ton are progressively decreased. But as has already been pointed out the number of mine starts or days operation per month is only an approximation of the exact working time and does not indicate the actual time (hours) worked. Since output is largely reflective of working time, the tonnage produced for a given area or period of time is equally significant in the effect upon labor costs per ton.

It has been thought desirable in comparing the labor costs per ton under the 8-hour work day and under the 7-hour work day to use comparable months of the year when seasonal demand would have similar effects. Such a comparison is set forth in Table XVI. Total mine labor costs (including supervisory and clerical) per ton are compared for the months of November and December, 1933 and January, 1934 (8-hour working day) and November and December, 1934 and January, 1935 (7-hour working day) in specified divisions and subdivisions of this industry. Unfortunately no cost data were reported for Western Kentucky in Division 1 and for Iowa in Division 11 during the latter months of the statistical program. Similarly Divisions IV and V early in 1934 made only scattered cost reports to the NRA and by June had ceased reporting altogether. Table XVl, therefore, compares labor costs under the 8-hour and 7-hour days for the areas east of the Mississippi River (except Western Kentucky). Since these areas produce approximately 92 per cent of the national tonnage, a comparison of their labor costs may be taken as indicative of the industry. In considering the percentage increase in labor costs per ton during the 7-hour pay period attention should be given to the change in the reported tonnage.

The weighted average labor cost per ton for Division 1 (exclusive of Western Kentucky) during the months of the 8-hour day period used in Table XVI amounted to 94.25 cents, but during the months of the 7-hour day period this cost increased to $1.1578 per ton - an increase of 22.84 per cent. Since the reported tonnage declined 5.5 per cent, it may be said that a small portion of the increased cost should be attributed to that factor, but undoubtedly the significant items contributing to this increased labor cost per ton were the shortened work day and the increased basic wage rates.

TABLE XV.

Comparison of Mine Labor Costs per Ton During 8-Hour Day Period (November and December, 1933 and January 1934) and 7-Hour Day Period (November and December, 1934 and January 1935) in Specified Areas of the Bituminous Coal Industry.

Area	Per Cent Change in Reported Tonnage	Labor Costs Per Ton Nov.& Dec.1933 and Jan.,1934	Labor Costs Per Ton Nov.& Dec.,1934 and Jan., 1935	Per Cent Change in Labor Cost
Division I				
Eastern Subdivision	-2.0	$ 1.0518	$ 1.2889	22.54
Maryland	-14.3	1.1518	1.3072	15.50
Upper Potomac	+10.9	1.1340	1.3293	17.22
Western Pennsylvania	-8.0	.9933	1.1855	19.35
Northern W. Virginia	-13.2	.7761	.9908	27.66
Ohio	+ 9.5	.9605	1.1521	19.95
Michigan	-10.0	1.5770	1.8335	16.27
Panhandle, W. Virginia	- 1.2	.9747	1.1476	17.74
Southern No. 1. 1/	+ 5.2	.9493	1.1562	21.80
Southern No. 2 1/	-10.4	.8826	1.0968	24.27
Total Division I 2/	-5.5	.9425	1.1578	22.84
Division II				
Indiana deep	- 3.2	.7672	.8077	5.28
Indiana strip	- 2.9	.3644	.4281	17.48
Indiana deep and strip	- 3.1	.6202	.6689	7.85
Illinois deep	+12.1	.8647	.9528	10.19
Illinois strip	+10.8	.3543	.4337	22.41
Illinois deep and strip	+11.9	.7828	.8694	11.06
Total Division II deep 3/	+8.8	.8435	.9248	9.64
Total Division II strip 3/	+4.6	.3589	.4278	19.20
Total Division II deep and strip 3/	+7.9	.7392	.8211	11.08
Total Division III 4/	+7.5	1.1345	1.3862	22.19

1/ Comparison for months of December and January. Data for November,1934 are not available.

2/ Excluding Western Kentucky: comparison for months of December and January since Southern No. 1. and Southern No. 2 did not report November, 1934 separately.

3/ Excluding Iowa.

4/ Comparison for months of November and December. No report for January, 1935.

The amendments to the Code affected the various Subdivisions of Division I in differing degrees. Thus, for example, in Eastern Subdivision the labor cost per ton increased from $1.0518 to $1.2889 per ton or 22.54 per cent while tonnage declined only 2 per cent. In Maryland the labor cost per ton increased 15.5 per cent and tonnage fell 14.3 per cent. The Upper Potomac Subdivision reported a 10.9 per cent increase in tonnage, but over the same period labor cost per ton rose from $1.134 to $1.329 or 17.22 per cent. The Western Pennsylvania Subdivision, which along with Eastern Subdivision and Ohio sponsored Amendment No. 1, reported an 8 per cent decrease in tonnage and an increase of 19.35 per cent in labor cost per ton ($.9933 to $1.1855). The largest percentage increase in labor cost per ton in Division I was registered by Northern West Virginia. While a part of this increase may have arisen from the 13.2 per cent decline in tonnage, it is also known that this area had a greater increase in basic day rates and tonnage rates than any other area in Division I as well as the uniform reduction in working hours per day. However, no information is available whereby a proper allocation of the increased labor costs may be made to the appropriate influencing factors. In Ohio, despite a 9.5 per cent increase in output which normally would have meant increased working time and lowered labor costs per ton, the Code Amendments witnessed a 19.95 per cent increase in labor costs ($.9605 to $1.1521). In the case of Southern No. 1 and Southern No. 2 comparison of labor costs could only be made for the months of December and January because the November, 1934 data could not be separated from the reports for a number of months made by these areas. Southern No. 1 reported a tonnage increase of 5.2 per cent and a labor cost increase of 21.8 per cent ($.9493 to $1.1562). In Southern No. 2 the tonnage declined 10.4 per cent and the labor cost rose from $.8826 to $1.0968 or 24.27 per cent.

Labor costs per ton in Division II (excluding Iowa) when compared for the 8-hour and 7-hour day periods are especially interesting. This interest arises from the fact that the basic day rates for inside skilled labor and outside common labor in Indiana and Illinois were unchanged by Code Amendments so that only the hourly rates were increased to meet the reduction in hours for the working day from 8 to 7. Tonnage rates likewise remained undisturbed. It is logical, therefore, to assume that any increase in labor costs per ton following the Amendments to the Code resulted primarily from the shortening of the work day. The labor costs in Division II have added interest in that data are available for both deep and strip mining and it is therefore possible to note the varying effect of a shortened work day on these operations.

Total production of deep and strip mines in Division II increased 7.9 per cent during the months of the 7-hour day period which are compared with those of the 8-hour day period and the labor cost per ton rose from $.7392 to $.8211 or 11.08 per cent. The percentage increase in labor costs in Division II was less than that of either Divisions I or III. The explanation for the relatively smaller labor cost increase is found primarily in the fact that basic day rates were not increased, but it may be said that the labor cost increase might have been smaller had it not been for the strip mining operations. It will be noted that deep mine labor costs in Division II increased from $.8435 to $.9248 or 9.64 per cent, but labor costs in strip mines of this Division rose 19.20 per cent ($.3589 to $.4278). Several factors combined to increase labor costs in strip mining much more than in deep mining. Strip mines are highly mechanized

and their operations were patterned on an 8-hour day basis so that the reduction in working hours to 7 per day not only disturbed the operating schedule and thus reduced efficiency, but also less opportunity existed to bring about improvement through further mechanization. This latter situation was subject to readjustment and so may not be considered of basic importance. Far more significant was the fact that the working force in strip mines is made up of day men, while the deep mines employ a large proportion of tonnage men. Since day men are paid on a time basis any reduction in working time even though not accompanied by a wage rate increase means higher labor costs because daily output is definitely reduced. The change in working hours per day from 8 to 7 meant a definite reduction of 12.5 per cent in working time for the day men. In the case of tonnage men, who comprise the majority of the employees in deep mines, a similar reduction in working hours does not have the same effect upon output because these men rarely worked a full 8 hours even before the change and since they were paid on a piece work basis, they could speed up their work so as to maintain approximately the same output with less working time.

The foregoing remarks made with reference to Division II apply equally well for the Subdivisions in Illinois and Indiana. In Illinois deep mines, the change in working time was reflected by an increase of only 10.19 per cent in labor costs, while strip mine labor costs per ton increased 22.41 per cent. The Indiana deep mines, despite a decrease in tonnage of 3.2 per cent, had an increase in labor costs of only 5.28 per cent while strip mine labor costs per ton rose 17.48 per cent.

Labor costs per ton in Division III increased from $1.1345 to $1.3862 or 22.19 per cent -- approximately the same as for Division I. The tonnage reported in Division III increased 7.5 per cent, however, while that of Division I fell 5.5 per cent. It is, therefore, logical to assume that had Division III maintained the same output in both the 8 and 7-hour day periods, its labor cost increase would have been greater than in Division I.

The foregoing discussion treats labor cost per ton in the various areas of the industry under the Bituminous Coal Code and its Amendments. It is similarly important to compare the labor cost per ton prior to the Code and under the Code after the wage and hours revisions. The only data indicating labor cost per ton immediately prior to the Code are those which were calculated from the wage rates in effect on May, 1933 as reported to the N.R.A. on Form C in December, 1933. These calculations assume a continuation of similar working conditions in every respect except that wage rates were increased with the adoption of the Code. Such an assumption had some validity for the first part of the Code period (November, 1933 through March, 1934) except in those areas (as Alabama) where the Code established a shorter and uniform work day. When, however, the Code was amended so that working hours per day were reduced and wage rates were further increased, the calculated pre-Code labor cost loses some of its validity. It must, therefore, be admitted that the labor costs per ton for May, 1933 as shown in Table XVII are only rough approximations, but are being used for want of any more accurate information. Since only those operators whose wage rates were relatively high reported what they paid in May, 1933, it may be that the labor cost per ton during the Code period increased even more than Table XVII indicates.

The comparison of labor costs during the 10 months period, April, 1934 through January, 1935, with those calculated for May, 1933 show that in five important Subdivisions of Division I, the labor cost per ton increased within the rather narrow range of 48.3 cents to 56.4 cents. These areas (Eastern Pennsylvania, Western Pennsylvania, Ohio, Northern West Virginia and Southern No. 2) produce approximately 77 per cent of the tonnage in Division I. It is reasonable to assume that had all the Subdivisions of Division I reported May, 1933 labor cost per ton, a weighted average of such costs when compared with those under the Code after amendments would show that labor costs per ton for Division I (producing in excess of 70 per cent of the national output) increased approximately 50 cents.

The percentage increase in labor cost per ton for those areas in Division I which reported for May, 1933 varied widely. Northern West Virginia, as might be expected in view of the day and tonnage rate increases effected by the Amendments, showed the sharpest rise - 106.2 per cent. This increase in labor cost explains the protests of the Northern West Virginia operators against the Code Amendments. The next largest labor cost increase, 93.3 per cent, occurred in Southern Subdivision No. 2. Western Pennsylvania followed these areas closely with an increase of 90.1 per cent. The smallest labor cost increase for those areas reporting is found in Eastern Pennsylvania - 59.9 per cent.

Labor cost per ton in Division III rose from $.747 in May, 1933 to $1.413 for the 10 month period, April, 1934 through January, 1935, or 89.2 per cent. This large increase is explained by the fact that a 9 and 10-hour day and very low wage rates prevailed prior to the Code, while after the Code Amendments, the working day consisted of 7 hours and wage rates had been increased. Alabama mining operations were affected by the Code hours and wages more than those of any other area for which data are available. Labor cost per ton increased from $.677 to $1.411 - an increase of 73.4 cents per ton or 108.4 per cent.

Similar data for Divisions II, IV and V are not available. However, in most of these areas the wage rates established in existing contracts were specified in the Code and made applicable to other mines which had no contracts. The increase in labor cost per ton came chiefly after the Amendments to the Bituminous Coal Code.

Employment under the Code:

In view of the fact that increased employment was a primary objective of the Bituminous Coal Code, it is unfortunate that no statistical data are available from which to determine accurately the degree of success attained by the Code with reference to this objective. The employment data reported by the Bureau of Mines are on an annual basis. Since the Bituminous Coal Code became effective October 2, 1933, the Bureau of Mines data give no indication as to the employment prior to the Code and under the Code. Similarly, it should be noted that the amendments to the Code which reduced hours of work per day and increased basic rates were effective from April 1, 1934 and so again it is impossible to state precisely from the Bureau of Mines' data the effect of reduced working time on employment. Moreover, since the employment

TABLE XVII

Comparison of Labor Cost Per Ton May, 1933 with Labor Cost Per Ton Under the Code
(November, 1933 - March, 1934 and April, 1934 - January, 1935)

Division and Subdivision	Labor Cost		Increase Due to Code December, 1933 over May, 1933		Labor Cost		Increase Due to Amendments		Average Increase Under Code	
	May 1933	December 1933			Nov. 1933 through Mar. 1934	10 months Apr. 1934 through Jan. 1935	10 months - April, 1934 - January, 1935 over 5 months November, 1933-March, 1934		10 months, April, 1934. January, 1935 over May, 1933	
	Per Ton	Per Ton	Per Ton	Per Cent Increase	Per Ton	Per Ton	Per Ton	Per Cent Increase	Per Ton	Per Cent Increase
Division I										
Eastern Pennsylvania	$ .810	$ 1.074	$ .264	32.6	$ 1.066	$ 1.295	$ .229	21.5	$ .485	59.9
Western Pennsylvania	.626	1.005	.379	60.5	.990	1.190	.200	20.2	.564	90.1
Ohio	.654	.959	.305	46.6	.953	1.152	.199	20.9	.498	76.1
Michigan	—	1.618	—	—	1.570	1.931	.361	23.0	—	—
Panhandle	—	.971	—	—	1/ .982	1.128	.146	14.9	—	—
Northern West Virginia	.483	.776	.293	60.7	.775	.996	.221	28.5	.513	106.2
Total Division I - North	2/	.981	—	—	.974	1.186	.212	21.8	—	—
Southern No. 1	—	.960	—	—	.943	1.146	.203	21.5	—	—
Southern No. 2	.563	.891	.328	58.3	.876	1.088	.212	24.2	.525	93.3
Maryland & Upper Potomac	.708	1.142	.434	61.3	1.121	1.321	.200	17.8	.613	86.6
Western Kentucky	—	.708	—	—	2/	—	—	—	—	—
Total Division I - South	2/	.911	—	—	.910	1.119	.209	23.0	—	—
Total Division I	2/	.947	—	—	.943	1.152	.209	22.2	—	—
Division II										
Illinois	—	.791	—	—	.775	.866	.091	11.7	—	—
Indiana	—	.613	—	—	.605	.719	.114	18.8	—	—
Iowa	—	1.447	—	—	2/	—	—	—	—	—
Total Division II	—	.777	—	—	.730	.829	.099	13.6	—	—
Division III										
Alabama	.677	1.112	.435	64.3	1.109	1.411	.302	27.2	.734	108.4
Total Division III	.747	1.130	.383	51.3	1.122	1.413	.291	25.9	.666	89.2

Source: N.R.A. Bituminous Coal Statistics
1/ Does not include March, 1934
2/ Incomplete data

data published by the Bureau of Mines are based upon operator reports, they tend to indicate the working force attached to the mines but do not show irregular and discontinuous employment. (*) As a result, the average number of men employed at the mines is apt to be somewhat higher than the number of men regularly employed. Bearing the foregoing remarks in mind, the Bureau of Mines shows that employment in 1933 amounted to 418,703 while that of 1934 was 458,011 - an increase of 39,208 or approximately 9.4 per cent. Since it is generally recognized that the N.I.R.A. gave an impetus to greater employment in the summer months of 1933 and that the Bituminous Coal Code brought increased employment after October, 1933, it is probable that the percentage increase in employment during the code period over the pre-code months was somewhat higher than that shown by the Bureau of Mines.

Most bituminous coal employment data, being based upon reports made by mining companies, are subject to the limitations inherent in such reporting, namely, that they include all individuals on the payrolls rather than the number actually working full time. The United States Census of Population and Unemployment taken in April, 1930 as a house to house canvass is more comprehensive and in the case of unemployment denotes the mine worker's status on a single working day - that preceding the enumerator's visit. Since the Bureau of Labor Statistics monthly index of employment is the only available month to month indication of employment changes, it has been applied to the Census of Occupations as of April, 1930, converted to 100 per cent and carried forward. The resultant estimates of employment and unemployment are shown in table XVIII.

The April, 1930 survey showed a total of 621,545 coal mine employees in the industry. The estimated number of anthracite miners was deducted resulting in a total of 477,090 bituminous coal miners. Returns for all gainful workers showed approximately 1.5 per cent as unable or unwilling to work. Deducting this percentage from 477,090 leaves approximately 470,000 able bodied workers attached to the industry. The April, 1930 survey indicated 38,149 men as being without jobs, or approximately 32,000 able workers unemployed. The survey recorded 83,793 coal mine workers (including anthracite) as having been laid off on the day preceding the enumerator's visit. Of this group, 18,386 men or 22 per cent had been idle for more than four weeks. Undoubtedly many of these men retained their place on the payroll and so would be reported to the Bureau of Mines and to State Bureaus as employed, although these men clearly were not at work during the lay-off period. The data set forth in Table XVIII represent the application of the Bureau of Labor Statistics index to the base of those reported as with jobs in the April, 1930 census.

According to the estimates in Table XVIII, the low point in bituminous coal employment was reached in July, 1932 when the index stood at 58.6 and slightly over 200,000 men were unemployed. Unemployment in this month arises in some measure from the seasonal character of the industry. The index for the year 1932 was 67.4, while in the first six months of 1933 the index averaged 65.5. Viewed in this

(*) See Seasonal and Cyclical Fluctuations of Employment

Table XVIII

ESTIMATE OF THE NUMBER OF COAL MINE OPERATIVES ON PAYROLLS AND WITHOUT JOBS IN THE BITUMINOUS COAL INDUSTRY, 1930 - 1935. BY MONTHS 1/

Months	1930			1931			1932			1933			1934			1935		
	Bureau of Labor Index of Employment	Number of Coal Mine Operatives on Payrolls	Number of Coal Mine Operatives Without Jobs	Bureau of Labor Index of Employment	Number of Coal Mine Operatives on Payrolls	Number of Coal Mine Operatives Without Jobs	Bureau of Labor Index of Employment	Number of Coal Mine Operatives on Payrolls	Number of Coal Mine Operatives Without Jobs	Bureau of Labor Index of Employment	Number of Coal Mine Operatives on Payrolls	Number of Coal Mine Operatives Without Jobs	Bureau of Labor Index of Employment	Number of Coal Mine Operatives on Payrolls	Number of Coal Mine Operatives Without Jobs	Bureau of Labor Index of Employment	Number of Coal Mine Operatives on Payrolls	Number of Coal Mine Operatives Without Jobs
January				93.9	429,710	40,290	80.8	369,749	100,251	69.8	319,421	150,579	75.8	346,896	123,104	80.0	366,120	103,880
February				91.5	418,738	51,262	77.4	354,197	115,803	69.3	317,131	152,869	76.1	348,235	121,765	81.1	371,131	98,869
March				88.8	406,382	63,618	75.2	344,131	125,869	67.6	309,355	160,645	77.8	356,054	113,946	81.6	373,421	96,579
April	94.4	432,000	38,000	85.9	393,120	76,880	65.5	299,765	170,235	63.7	291,514	178,486	72.2	330,394	139,606	74.3	340,027	129,973
May	90.4	413,683	56,317	82.4	377,093	92,907	62.6	286,459	183,541	61.2	280,066	189,934	76.7	351,000	119,000	75.3	344,606	125,394
June	88.4	404,525	65,475	78.4	358,776	111,224	60.5	276,869	193,131	61.3	280,541	189,459	76.7	351,000	119,000	77.9	356,486	113,514
July	88.0	402,710	67,290	76.4	349,618	120,382	58.6	268,186	201,814	63.2	289,224	180,776	77.0	352,382	117,618	70.0	320,328	149,672
August	89.2	408,197	61,803	77.0	352,382	117,618	59.4	271,814	198,186	68.6	313,934	156,066	77.1	352,814	117,186	73.4	335,880	134,120
September	90.5	414,158	55,842	80.4	367,934	102,066	62.4	285,552	184,448	71.8	328,579	141,421	78.2	357,869	112,131	77.1	352,814	117,186
October	91.8	420,120	49,880	81.3	372,038	97,962	67.0	306,590	163,410	68.0	311,170	158,830	79.3	362,880	107,120	74.3	340,027	129,973
November	92.5	423,317	46,683	81.1	371,131	98,869	69.4	317,606	152,394	74.8	342,317	127,683	79.8	365,170	104,830			
December	92.5	423,317	46,683	81.2	371,606	98,394	70.0	320,328	149,672	75.4	345,038	124,962	79.7	364,738	105,262			
Average	93.4	427,421	42,579	83.2	380,765	89,235	67.4	308,448	161,552	67.9	310,738	159,262	77.2	353,290	116,710	76.5(a)	350,093(a)	119,907(a)

1/ Base used for estimate was number of Coal Mine Operatives and jobless as reported by the Census of Unemployment, April 1930 and Bureau of Labor Statistics Monthly Index of Employment.

METHOD -

B. L. S. INDEX		CONVERTED INDEX		Number on Payrolls
94.4	=	100.0	=	432,000
90.4	=	95.8	=	413,683
88.4	=	93.6	=	404,525

(a) Two months average.

manner, the early months of 1933 represented the lowest level of employment in the industry. The passage of the N.I.R.A. in June, 1933 and the adoption of the Bituminous Coal Code in October, 1933, were reflected by increased employment so that the index for the latter months of 1933 averaged 70.3. The average employment in this period (321,710) increased 22,039 as against the first six months of 1933. If the average employment in the first six months of 1934 (includes three months of code amendment) is compared with that of the first six months of 1933 (pre-N.I.R.A. and Coal Code) the estimated employment increase is about 47,589 (from 299671 to 347,260). Average employment in 1934, a full year under the Code, amounted to 356,290 in contrast to 310,733 in 1933 - an increase of 42,452 or approximately 13.7 per cent. It is likely that the employment increase approximated slightly more than 41,000 men. In March, 1933 the Bureau of Labor Statistics' index stood at 81.6 and 373,421 men were estimated as employed. This month was the highest point of employment since May, 1931 and undoubtedly the chief contributing factor was the threat of a general shut down following the expiration of wage contract on March 31, 1933. The employment decline registered in October, 1933 came with the new wage contract when mining operations had carried over heavy stocks of coal from previous months.

The foregoing estimates of increased employment purport only to calculate the number of men added to bituminous coal mining payrolls. No accurate statement can be made indicating the degree to which the Bituminous Coal Code contributed to added employment, but it is significant that these increases came at the time when the N.I.R.A. was enacted and the Code adopted. Neither do the estimated employment increases show the volume of employment afforded in terms of regular or continuous working time. Obviously, the most exact measures of real employment are data indicating man-days, or preferably man-hours, in the industry for a specific time period. Unfortunately such data are lacking so that only estimates of changes in the number of men on the payroll can be made without showing the degree of full-time or part-time employment.

It will be noted the estimated average unemployment even for the code year, 1934, was 116,710. Although the Bituminous Coal Code did bring about increased employment, the gain was not as extensive as might have been expected. Several factors contributed to this situation - especially the fact that many companies had sought to retain men by part-time work during the down-swing phase of the business cycle and thus were somewhat limited in adding more employees later; and also rising labor costs gave an impetus to mechanization which did not displace men so much as it made added employees less necessary. Similarly, rising labor costs served to increase stripping mines which rely heavily on mechanical operation. In some cases, too, the increased mine prices made possible the installation of new equipment. It should be remembered that the number of days the mines worked in 1934 increased 6.6 per cent over 1933 (167 to 178). Against these factors were the greater production in 1934 as against 1933 (7.7 per cent) and the lowered output per man per day for the same periods (8 per cent).

Despite the fact that the employment situation in bituminous coal mining improved considerably during the code period and thereafter as

compared with the preceding period, a large number of mine workers, exceeding perhaps 115,000 men were unemployed. That the condition was a serious one is evidenced by the fact that the Bituminous Coal Conservation Act of 1935 specified among the other duties of the Commission a study of:

> "The rehabilitation of mine workers displaced from employment, and the relief of mine workers partially employed. The Commission's findings and recommendations shall be transmitted to the proper agency of the Government for relief, rehabilitation, and subsistence homesteads". (*)

An indication of the grave situation of the unemployed and partially employed in coal mining areas may be secured from the data set forth in Table XIX. These data were derived from information reported by the Works Progress Administration. A coal mining area was defined as any county within a state where at least 60 per cent of the productive industrial workers were reported in the 1930 Census as employed in coal mining. The anthracite miners of Pennsylvania were excluded so that the data represents bituminous coal mining. The significant item in this Table is the percentage of the population in these coal mining areas that was reported as being on relief in June, 1935. It will be noted that in the coal mining areas of twelve states with a population of 2,134,190, the number of persons receiving relief amounted to 490,251 or 23 per cent of such population. Thus, approximately, one out of every four persons in these coal mining areas was reported as being on relief in June 1935. The lowest percentage of population on relief in coal producing areas was found in Wyoming with 10 per cent, while the highest percentage was 37.2 in Ohio. It is regrettable that the data do not show how many of the persons on relief were persons able and willing to work and so under improved circumstances might have been classed as gainfully employed.

The comparison between the percentages of persons in coal mining areas and in entire states on relief rolls is perhaps the best indication available as to the serious plight of the mine workers. For example, 15.9 per cent of the population in the specified states were on relief in June, 1935, while in the coal mining areas the percentage of persons on relief amounted to 23 per cent. If relief data regarding these states were available for the period prior to the NRA, it is probable that considerable improvement would be evident for the later period. In any case, the available data do indicate that the bituminous coal mining areas are still hard pressed and that people in these areas are in perhaps worse circumstances than are people living in areas having more divers occupations. Thus in Ohio, 37.2 per cent of the population in coal mining areas were on relief, while in the entire state 17 per cent of the population were on this basis. A similar situation applies in Indiana where 35.6 per cent of the coal mining area population is on relief and 13 per cent for the entire state. In only three of the listed states did the entire state relief percentage exceed that of the coal mining areas - Utah, West Virginia and Wyoming. Of this

(*) Bituminous Coal Conservation Act of 1935, Section 16, paragraph 3.

TABLE XIX

COMPARISON OF PERCENTAGE OF POPULATION ON RELIEF IN COAL MINING AREAS AND IN ENTIRE STATES IN JUNE, 1935.(*)

STATE	Areas Having 60 Per Cent of Productive Industrial Workers Employed in Coal Mining.			Persons on Relief in Entire State	
	Population	Number of Persons on Relief	Per Cent of Population on Relief	Number	Per Cent
Alabama	59,445	12,561	21.1	344,468	13
Colorado	53,070	17,460	32.9	228,628	22
Illinois	221,892	64,213	28.9	1,010,321	13
Indiana	23,238	8,275	35.6	420,863	13
Kentucky	376,311	87,096	23.1	495,468	19
Ohio	44,175	16,422	37.2	1,102,518	17
Pennsylvania	591,614	153,092	25.9	1,177,303	19
Tennessee	26,827	5,519	20.6	347,200	13
Utah	17,798	4,004	22.5	104,584	21
Virginia	51,167	11,216	21.9	233,259	10
West Virginia	629,594	107,490	17.1	368,819	21
Wyoming	29,059	2,903	10.0	25,557	11
Total	2,134,190	490,251	23.0	5,858,988	15.9

(*) Derived from information supplied by Works Progress Administration. Anthracite miners in Pennsylvania excluded.

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group West Virginia is the only important coal producing state and its entire state relief percentage does not greatly exceed the percentage in coal mining areas.

Earnings under the Code:

The original statistical program undertaken by the NRA for the bituminous coal industry included, among other data, the reporting by the industry of mine workers' earnings. These earnings data were submitted on the Form C. Unfortunately, this portion of the statistical program ceased during the latter part of December, 1933. (*) As a result, earnings were reported for only three pay periods from November 1st through November 15, 1933. These earnings data were very essential to a proper investigation of the wage differential problem. Moreover, had the Form C reporting been continued through the period following the Code amendments, a much more realistic analysis of the effects of the shortened work day and the increased basic wage rates upon total earnings for an area as well as upon earnings of particular occupational groups would have been possible.

The Form C reports for the period December 1 to 15, 1933 requested the operators to report opposite each labor classification the wage rate in effect in May, 1933. These reports were edited in the Coal Section of N.R.A., the final study being confined to only those reports which were included in the December employment and earnings study. Schedules reporting incomplete information, such as May rates for day men but not for piece workers, or multiple rates for piece workers were rejected. In the included reports, numerous occupations were eliminated, particularly those composite groups having no specific rate, such as "Other Skilled", "Other Unskilled", etc., any group for which no rates were reported, and those for which two or more rates were reported.

A ratio was computed between the rates reported for each period for each occupation, and this ratio applied to the total earnings of the men in that occupation for the period December 1 to 15, thus securing a calculated total earnings figure for May. From the summary of all these totals, it is possible to calculate the increases in the actual December earnings over what they would have been in May, had the same opportunities for work existed at that time, i.e., the same number of days and the same number of hours per day.

The estimated earnings increases for mine workers in December, 1933 as against May, 1933 are set forth in Table XX. It will be noted that the Subdivisions comprising Michigan, Panhandle, Southern No. 1, and Western Kentucky in Division I did not report satisfactory data for making any comparisons. Of the submitted December reports, 44.6 per cent of the total earnings represented were for mines having complete data on May rates. For these mines and areas in Division I, the total average earnings increased $769,106 or 50.4 per cent during this pay period on the basis of the December wage rates (original rates in Code) as against the May, 1933 rates (pre-Code). The degree to which certain important occupational groups benefited under the Code is significant. For example, miners' earnings increased 50 per cent; loaders'

(*) For a discussion of the controversy leading to the cessation of Form C reporting see Section on Wage Differentials.

TABLE XX

SUMMARY OF ESTIMATED INCREASES IN EARNINGS OF WAGE EARNERS IN BITUMINOUS COAL MINES

(Actual earnings in first pay-roll period of December, 1933, compared with estimated earnings of same employees, in same working time, if employed at rates prevailing in May, 1933.)

SUB-DIVISION	Number of mines reporting Dec. 1-15	Total earnings all wage earners Dec. 1-15	Number of mines in selected sample*	Total earnings in selected mines Dec. 1-15	Percent (4) is of (2)	Estimated total earnings of wage earners in selected mines, if earning at May rates	Percent increase	Miners, piece-work, and day-rate basis			Laborers			Day Men - Inside and Outside		
								Total earnings in selected mines Dec. 1-15	Estimated total earnings at May rates	Percent increase	Total earnings in selected mines Dec. 1-15	Estimated total earnings at May rates	Percent increase	Total earnings in selected mines Dec. 1 - 15	Estimated total earnings at May rates	Percent increase
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Eastern Pennsylvania 1/	133	1,076,047	75	593,200.	55.4	447,643.	32.5	444,907.	338,191.	31.6	274,519.	207,215.	32.5	148,293.	109,452.	35.5
Maryland & Upper Potomac	24	103,336	10	42,080.	41.3	28,455.	61.3	28,410.	17,675.	60.7	11,623.	7,238.	60.6	14,270.	8,780.	62.5
Western Pennsylvania	158	1,385,055	80	593,376.	42.9	309,981.	60.6	429,221.	265,319.	61.8	319,526.	194,461.	64.3	164,755.	104,662.	57.4
Northern West Virginia	82	586,962	44	338,723.	57.7	210,755.	60.7	240,982.	147,307.	63.6	195,429.	115,325.	69.5	97,741.	63,448.	54.0
Ohio	53	481,800	31	250,264.	51.9	170,736.	46.6	142,680.	130,426.	47.9	174,727.	116,721.	49.7	57,384.	40,312.	42.4
Michigan 3/																
Panhandle, West Virginia 2/																
Southern Sub-Division #1 4/																
Southern Sub-Division #2	262	1,519,937	89	477,452.	31.4	301,617.	58.3	308,764	197,561.	56.3	259,695.	164,840.	57.5	168,688.	104,056.	62.1
Western Kentucky 5/																
Total Division I	712	5,147,137	329	2,295,095.	44.6	1,527,189.	50.4	1,645,154.	1,095,479.	50.2	1,235,519.	805,800.	53.3	651,131.	430,710.	51.2
Total Division III 6/	47	238,809	20	84,237.	35.3	55,691.	51.3	61,947.	41,485.	49.3	30,345.	20,290.	49.6	22,290.	14,206.	56.9

* Sample includes all mines which reported comparable data.
1/ Includes Southern Somerset County.
2/ No May rates reported.
3/ No reports
4/ Not enough mines reported May rates to make sample representative.
5/ Alabama, Georgia and Southern Tennessee.

DIVISION OF RESEARCH AND PLANNING

BITUMINOUS COAL CODE SECTION

F. E. BERQUIST
May 29, 1934
August 14, 1934

earnings, 53.3 per cent; and loaders, 51.2 per cent. On this basis the loaders received the largest increase, but the average increase for all groups was fairly similar. However, particular Subdivisions show wider variations in the percentage increase of earnings for certain occupational groups. Thus, in Northern West Virginia loaders' earnings increased 69.5 per cent as against 54 per cent for day men and 63.6 per cent for miners.

In Division III where more than 8 hours of work per day prevailed prior to the Code, the standard 8-hour day and increased wage rates under the Code resulted in an increase of $28,546 or 51.3 per cent for one day period. As might be expected, the Code brought a greater percentage increase in earnings to the day men than to the other occupational groups. Day men's earnings increased 56.9 per cent as against 49.6 per cent for loaders and 49.3 per cent for miners. Undoubtedly, a large part of the greater earnings increase to day men is to be attributed to the shortened work day and the elimination of the "clean-up" system under the Code.

When these earnings data are considered in terms of the average earnings per day, a comparison of the data for the pre-Code and Code period disclose interesting information. This comparison is made in Table XXI.

It is significant to note the relatively low daily earnings which prevailed prior to the adoption of the Bituminous Coal Code. The areas in Division I, which reported May, 1933 wage data, represent approximately 57 per cent of the national annual tonnage. In these areas even the occupation requiring most skill and experience - miners - averaged only $2.99 per day prior to the Code. Day men and loaders averaged $2.81 and $2.79 per day respectively. With the advent of the Code, miners' daily earnings for all these areas averaged $4.48 or an increase of $1.49 per day. Daily earnings of day men rose to $4.21 during the early Code period - an increase of $1.40 per day and loaders' earnings increased to $4.32 per day or $1.53 more than had previously prevailed.

The foregoing data, being averages for an extensive portion of the industry, tend to conceal the wide variations which occurred in daily earnings, increases for particular districts and subdivisions. Northern West Virginia experienced the largest increases when daily earnings of loaders and miners are considered. Loaders' earnings in Northern West Virginia increased $1.93 per day, while miners' daily earnings in this area rose $1.90. The lowest subdivisional increase in earnings for loaders and miners ins found in Central Pennsylvania where loaders earned $1.12 and miners $1.07 more per day than previously. In the case of the day men, the largest subdivisional increases in daily earnings occurred in Maryland and Upper Potomac and in Southern Sub-division No. 2 - $1.54 and $1.53, respectively. Central Pennsylvania experienced the least increase in day men's daily earnings - $1.12 more than had previously prevailed. Within individual districts, daily earnings increases approximating $2.00 or more were not uncommon and in one area - the Connellsville, Pittsburgh Seam in Western Pennsylvania - an increase of $3.00 per day was reported.

TABLE XXI

COMPARISON OF AVERAGE EARNINGS PER DAY OF EMPLOYEES IN BITUMINOUS COAL MINES BEFORE AND AFTER ADOPTION OF CODE 1/.

Sub-division and Area	Miners-Piece-work and Day-rate Basis: Average Earnings per man per day, December 1-15 1933	Miners-Piece-work and Day-rate Basis: Average Earnings per man per day, May, 1933 (estimated)	Miners-Piece-work and Day-rate Basis: Increase December over May, 1933	Day-Men - Inside and Outside: Average Earnings per man per day, December 1-15 1933	Day-Men - Inside and Outside: Average Earnings per man per day, May, 1933 (estimated)	Day-Men - Inside and Outside: Increase December over May, 1933	Loaders: Average Earnings per man per day, December 1-15 1933	Loaders: Average Earnings per man per day, May, 1933 (estimated)	Loaders: Increase December over May, 1933
Central Pennsylvania									
Barnesboro	$ 3.87	$ 3.06	$ .81	$ 4.28	$ 3.29	$ .99	$ 3.67	$ 2.86	$ .81
Blacklick and Broadtop	4.60	3.35	1.25	4.23	2.89	1.34	4.19	3.21	.98
Clearfield	3.54	2.72	.82	4.18	2.95	1.23	3.48	2.58	.90
Nanty-glo	4.94	3.90	1.04	4.31	3.13	1.18	4.93	3.87	1.06
Reynoldsville	4.67	3.41	1.26	4.21	3.09	1.12	4.57	3.33	1.24
South Fork	4.24	3.35	.89	4.39	3.40	.99	4.02	3.04	.98
Southern Somerset	4.53	2.98	1.55	4.23	2.91	1.32	4.27	2.82	1.45
Total	4.41	3.34	1.07	4.28	3.15	1.13	4.37	3.25	1.12
Maryland and Upper Potomac									
Maryland	3.93	2.40	1.53	4.05	2.44	1.61	3.64	2.27	1.37
West Virginia	4.70	3.01	1.69	3.96	2.47	1.49	4.82	3.00	1.82
Total	4.28	2.67	1.61	4.00	2.46	1.54	4.06	2.53	1.53
Western Pennsylvania									
1, 2 and 3 - Thick Vein	4.66	3.19	1.47	4.36	3.10	1.26	4.46	2.99	1.47
4 - Thin Vein, Avella	3.97	2.01	1.96	4.40	2.28	2.12	3.74	1.81	1.93
5 - Thin Vein 2/	4.24	2.67	1.57	4.36	2.93	1.43	4.03	2.46	1.57
6 - Thin Vein 3/	3.73	2.34	1.39	4.40	3.01	1.39	3.52	2.19	1.33
7 - Connellsville, Pgh. seam	5.55	2.55	3.00	4.34	2.22	2.12	5.38	2.32	3.06
8-12 - Connellsville, Sewickley 4/	4.41	2.67	1.74	4.40	2.66	1.74	4.28	2.48	1.80
9 - Connellsville, all others	5.57	3.15	2.42	4.41	2.67	1.74	5.81	3.30	2.51
10 - Upper Freeport	4.51	2.71	1.80	4.35	2.40	1.95	4.22	2.47	1.75
11 - Thick Freeport	4.59	3.44	1.15	4.39	3.46	.93	4.38	3.12	1.26
13 - Butler - Mercer	3.21	2.36	.85	4.38	2.52	1.86	3.02	2.16	.86
14 - Greensburg	4.88	2.55	2.33	4.29	2.67	1.62	4.69	2.39	2.30
15 - Latrobe	3.62	1.81	1.81	4.36	2.60	1.76	3.49	1.67	1.82
16 - Ligonier	-	-	-	4.21	2.50	1.71	-	-	-
Total	4.52	2.85	1.67	4.37	2.93	1.44	4.30	2.63	1.67
Northern West Virginia									
Pittsburgh - Redstone	5.08	3.03	2.05	4.20	2.76	1.44	4.90	2.83	2.07
Sewickley, Freeport - Kittanning	3.99	2.31	1.68	4.20	2.59	1.61	3.78	2.13	1.65
Preston County	3.73	2.85	.88	4.18	2.31	1.87	3.72	2.76	.96
Sewall	4.67	3.24	1.43	4.17	2.95	1.22	4.53	3.08	1.45
Total	4.84	2.94	1.90	4.20	2.74	1.46	4.67	2.74	1.93
Ohio									
Division 1	4.17	3.02	1.15	4.36	3.17	1.19	3.93	2.81	1.12
Divisions 2 and 3	4.26	2.74	1.52	4.30	2.93	1.37	4.06	2.56	1.50
Total	4.22	2.86	1.36	4.33	3.03	1.30	4.00	2.68	1.32
Southern Sub-division #2									
Big Sandy - Elkhorn	4.63	3.19	1.44	3.97	2.58	1.39	4.44	3.02	1.42
Harlan	4.59	2.92	1.67	4.00	2.23	1.77	4.45	2.77	1.68
Hazard	4.05	2.48	1.57	3.94	2.30	1.64	3.79	2.32	1.47
Kanawha	4.52	2.95	1.57	3.96	2.59	1.37	4.37	2.80	1.57
Logan	4.11	2.57	1.54	3.94	2.54	1.40	3.95	2.46	1.49
Southern Appalachian	3.81	2.56	1.25	3.92	2.20	1.72	3.72	2.42	1.30
Virginia	4.44	2.59	1.85	4.02	2.49	1.53	4.17	2.45	1.72
Williamson	4.67	2.82	1.85	3.95	2.21	1.74	4.30	2.54	1.76
Total	4.41	2.82	1.59	3.97	2.44	1.53	4.21	2.66	1.55
Total of Division I	4.48	2.99	1.49	4.21	2.81	1.40	4.32	2.79	1.53
Alabama									
District 1	3.47	2.04	1.43	3.05	1.74	1.31	3.24	1.90	1.34
District 2	3.12	1.93	1.19	3.05	1.83	1.22	3.25	2.02	1.23
Districts 3 and 4	3.39	1.90	1.49	2.97	1.85	1.12	3.75	2.19	1.56
Total	3.24	1.94	1.30	3.02	1.82	1.20	3.27	2.00	1.27

1/ A comparison of the number of men included in this study with the total number included in the Employment and Earnings Study for the period December 1-15, 1933 shows this study to be representative to the following extent:
Division I - Miners, 55.2 per cent; Day-men, 62.7 per cent;
Loaders, 57.2 per cent.
Alabama - Miners, 44.9 per cent; Day-men, 51.6 per cent;
Loaders, 66.5 per cent.

2/ West of Monongahela River.
3/ East of Monongahela River.
4/ Includes Somerset Area.

It is unfortunate that the reporting of wage data for the above period was incomplete and that the statistical program of reporting earnings data did not continue into the period after the Code amendments. Such data would have been invaluable in establishing equitable wage differentials between various competing districts.

The Wage Bill Under the Code

The only continuous statistical indication of the amount paid out in wages in the bituminous coal industry for several years prior to the Code is the index of payrolls (based upon 1929), published by the Bureau of Labor Statistics. These data have been set forth in Table V of this Section. The total wage bill for the industry, exclusive of supervisory and clerical wages, in 1929 according to the Census of Mines and Quarries approximated $574,800,000. This amount was used as the base for the Bureau of Labor Statistics' index. According to this index the average payroll for each year since 1929 would be as follows:

Index and Amount of Payrolls in Bituminous Coal Mining, 1929 - 1935, by years. (*)
(000s of dollars omitted)

Year	Index	Amount	Change from Base Year	Change from Preceding Year
1929	100.0	$574,800,	-	-
1930	81.3	467,312,	-$107,488	-$107,488
1931	57.5	330,510,	- 244,290	- 136,802
1932	35.6	204,629,	- 370,171	- 125,881
1933	37.8	217,274,	- 357,526	+ 12,645
1934	54.2	311,542,	- 263,258	+ 94,268
1935 1/	57.2	328,786,	- 246,014	+ 17,244

The above annual data disclose a steadily declining payroll from 1929 forward through 1933. In the latter year, the average payroll was approximately $370,171,000 less than that of 1929. The average payroll in 1933 increased $12,645,000 over the preceding year. Again in 1934, the payroll increased $94,268,000 over 1933 and for eleven months in 1935, it averaged $17,244,000 above that of 1934. It is interesting to note that the 1935 average payroll approximated that of 1930. While these annual data indicate a constantly improving payroll since 1933, they show that even in 1935, bituminous coal payrolls averaged $246,014,000 less than in 1929 and it is generally recognized that payrolls in this industry were declining for almost a decade prior to 1929. It is evident, therefore, that the industry's payrolls are still at a low level.

No effort has been made to adjust these payroll figures to changing cost of living data. In this latter sense, it is likely that the mine workers' real income during the early depression years was somewhat better than the payroll data tend to indicate. Since a primary objective of the N.I.R.A. and the Bituminous Coal Code was to increase purchasing power, nominal wage data should be related to the cost of

(*) Bureau of Labor Statistics, 1929 base year
1/ Average for 11 months.

living. Unfortunately, no satisfactory information is available regarding mine workers' cost of living and it is obvious that general or even industrial workers' cost of living cannot be applied.

In order to evaluate properly the influence of the code period on bituminous coal payrolls, it is necessary to turn from the annual data and set up the index for the months of a coal year. Thus, for the twelve month period, April, 1933, through March, 1933, the payroll index averaged 32.5 and amounted to $186,810,000. For a similar twelve month period, April 1934 through March, 1935, the index averaged 56.5 and amounted to $324.762,000. The former period represents pre-N.I.R.A. and pre-code months, while the latter period covers the months after the code amendments. The comparison shows that the payroll index during the code period increased 24 points and the amount increased $137,952,000. It may be said, therefore, that payrolls during the latter months of the code period were approximately $138,000,000 greater than in the pre-code months.

The only other statistical evidence on labor costs in coal mining (NRA) from which estimates may be made of the wage bill tends to corroborate the Bureau of Labor Statistics' payroll data. The estimated wage cost per ton in May, 1933 for 78 per cent of the tonnage in Division I and 57 per cent of the national annual output was 61.4 cents. As has been previously stated in this section, the May, 1933 wage data are considered somewhat high so that any comparisons with later wage costs per ton tends to be conservative and understates the probable increase in the return to the labor. For the nine months period, April through December, 1934, (after code amendments) the wage cost per ton averaged $1.153. This cost represented an increased wage cost of 53.9 cents per ton or 87.8 per cent. Applying this increase to the total production of these areas of Division I, which reported their May, 1933 costs to NRA, during the period April 1, 1934 through March 31, 1935 - 206,000,000 tons - the increase in the wage bill amounted to $111,000,000. (*) These areas made the greatest gains in the industry because in addition to the general shortening of the workday from eight to seven hours (April 1, 1934), they had two increases in basic wage rates (October 2, 1933 and April, 1934). The estimated number of employees in these areas approximated 265,000. Accepting the increase of $111,000,000 in the wage bill, then the average increased return per worker amounted to $419 for the coal year, April, 1934 through March, 1935, as against what the earnings would have been had the May, 1933 wage rates and hours continued. If it is assumed that the average output per man per day were 4.2 tons, then the daily wage in these areas was $2.26 higher after April, 1934 than in May, 1933.

Similar wage data are available for Division III (Alabama, Georgia and Southern Tennessee) of the industry. The labor cost in May, 1933 was 74 per cent per ton. During the period April through December, 1934, under the Code, the labor cost averaged $1.39 per ton, an increase of 65 cents or 87 .8 per cent. The approximate tonnage produced in this area for the coal year April, 1934 through March, 1935 was 10,500,000.

(*) All sub-divisions of Division I reported except Southern No. 1, Michigan, Panhandle, and Western Kentucky. The areas which did not report represented approximately 15 per cent of the division's output.

Applying the per ton labor cost increase to this tonnage, gives approximately $6,800,000 as the amount by which the wage bill was greater than if the May, 1933 rates had continued. The estimated number of employees in Division III is about 18,000. On this basis the wage return per worker in this area for the year after April, 1934 was slightly over $375 than if the pre-code wage rates had continued.

The return to labor in Division II (Indiana and Illinois - excluding Iowa) were not increased as greatly as in either Division I or Division III. Union contracts were in effect for almost all of the production in this Division prior to the Code. The wage rates specified in these contracts were carried forward into t he code period. However, with the code amendment on April 1, 1934 - shortening the work day - hourly rates were increased and wage returns were likewise higher. The labor cost per ton in this division (excluding Iowa) for deep and strip mines combined was 72.99 cents during the five month period (November, 1933 through March, 1934) prior to the amendment. For the ten month period following the amendment (April 1, 1934), the labor cost was increased to 82.91 cents per ton - 9.92 cents or 13.6 per cent. The output in this area for the 12 months following the amendment approximated 58,000,000 tons. Applying the labor cost per ton increase to this tonnage results in an increase of $5,750,000 in the wage bill over what would have been received had the previous Code wages and hours continued. The estimated number of employees in Illinois and Indiana approximates $55,000. On this basis, each employee received slightly over $100 more in the year after April, 1934 than he would have received under the original code provisions.

Thus, taking the total producing areas east of the Mississippi River (exclusive of Southern No. 1, Panhandle, Michigan and Western Kentucky), the estimated tonnage would represent approximately 75 per cent of the national output and the employment would cover 338,000 men. The increases in the wage bill for the twelve months following April, 1934 over the pre-Code wages in this area was approximately $123,500,000 or about $365 more per employee.

The remainder of the industry, Division IV (comprising Missouri, Oklahoma, Kansas and Arkansas) and Division V (Rocky Mountain area) produce together less than 9 per cent of the national tonnage. Wage data for these areas, as well as for those in Division I which were excluded (about 16 per cent of the national output) are not available for making any comparison pre-Code and Code wage bills. Since no union contracts existed prior to the Code for the latter areas in Division I, it is probable that the wage increases approximated those of the other areas in the Division. In the case of non-union portions in Divisions IV and V, the rates of pay established by the Code were higher than existed previously. Further wage increases were secured with the shortening of the work day after the Code amendments.

An overall survey of the NRA wage data when compared with the Bureau of Labor Statistics' payrolls increase as indicated by their index, show approximately the same results. For example, the NRA wage bill increase estimate is $123,500,000 for 75 per cent of the

national production, while the Bureau of Labor Statistics index for the entire industry indicates a wage bill increase of approximately $138,000,000. It seems very probable that the comparatively large wage increases in those areas of Division I for which data are lacking and the lesser increases in Divisions IV and V after the Code amendments would bring the NRA estimate very close to that reported by the Bureau of Labor Statistics.

CHAPTER IV - C 1/

WAGE DIFFERENTIALS: THEIR HISTORY, THEIR INFLUENCE ON PRICES AND WAGES

Definite ascertainment of the wage differential situation existing at a given time between different districts, or between different fields or mines within a district, would require a great deal of knowledge concerning wage scales, organization of labor forces, mining conditions and the adjustment of payments to variations in such conditions. Such fullness of information it may be stated at the outset is not in existence. Elaborate accounting records have never been produced at a joint conference. Or as stated recently by the man whose experience with, and knowledge of, wage differentials is perhaps as wide as that of any one: "There never has been a scientific study of this question. As matters now stand, the established differentials in many instances have been the source of continued discord among miners and operators alike." (*) With this may be compared his earlier testimony before the United States Bituminous Coal Commission in 1920: (**)

> "Inequalities on tonnage rates, on machine differentials and otherwise, which the men claim are entitled to consideration, prevail. Some of these conditions have prevailed for a great number of years. They have prevailed because the Mine Workers have heretofore been powerless to secure their modification or adjustment and though in conference after conference we have taken up these matters and sought consideration, we were oftentimes by force of circumstances compelled to enter into an agreement, which did not carry with it any adjustment of these differentials and startling inequalities. Although in some fields the differentials were originally small matters, amounting to only a very few cents per ton, they have year after year.....through the system of applying percentage increase upon these rates and differentials, grown and grown, until today they menace the security of the industry."

From 1898 until its breakdown about 1927 the Interstate Joint Conference's wage agreement was the foundation of the wage structure. From 1927 until the establishment of Code rates in late 1933 such stable wage rates as existed were the result of district, or individual mine, agreements. When Code rates were eliminated the Appalachian Wage Agreement had supplanted the Central Competitive Field contract as the basis of stabilized wage rates. The Interstate Joint Conference went no further than to establish wage rates for four

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1/ Prepared by Charles E. Persons.

(*) Lewis, John L. Transcript of Proceedings, Coal Code Hearing, August 10, 1933, p. 329.

(**) Transcript of Evidence--a typewritten manuscript in 4 volumns, made available by the courtesy of the National Coal Association. Vol.I, p. 86.

basing points, one in each of the four states of Illinois, Indiana, Ohio, and Western Pennsylvania. (*) These rates supposedly were guides to be followed by the state and district conferences later. The degree of their influence, however, frequently has been misconceived. In practise they were not regarded as fixed rates. Rather the negotiators in district conferences were concerned to raise or lower existing rates in the same degree that basing point rates had been changed. Original union contracts tend to accept the wage structure as found. Successive adjustments in the district conference may be based fundamentally on the wage levels of 1898 or even of an earlier date.

In the outlying districts, although the areas covered by union contracts varied with the fortunes of unionism, at one time or another union contracts were found in Central Pennsylvania, Iowa, Maryland, Northern West Virginia, the Kanawha, Panhandle, and New River districts of West Virginia, some few districts in Southeastern Kentucky and Tennessee, Western Kentucky, Michigan, Washington, Wyoming, Montana, Missouri, Kansas, Arkansas, and Oklahoma. The last four states named made up the Southwestern Interstate Conference with a history of wage negotiations of its own. Aside from these outlying districts contracts were made at times with individual mines in other fields, e.g., in Northern Colorado, Southern West Virginia and Alabama. Price competition bound all these districts, with the possible exception of the extreme northwest, to the Central Competitive Field. Hence it was natural that wage changes there should be reflected in the outlying districts. This tendency the union organization strongly supported. Testimony was given in 1920 to the effect that "whatever (advance) was granted in the Central Competitive Field was applied to the tonnage rates in the Southwestern District." In the Kanawha field of West Virginia it was understood that "whatever rise or fall in the Central Competitive Field took place, the same percentage of increase or decrease would affect" that district. While in Colorado it was stated that "under the joint contract we have a clause which automatically gives us the same advances in wages that may be applied in the Central Competitive Field." (**)

However, this principle frequently yielded to the pressure of other forces. The incursion of competing fuels in the southwest area provided special conditions which resulted in the building up in that area of a special wage system on a lower level than the "principle" would have established. Union weakness joined either to employer strength or to the sheer pressure of competitive forces reached a similar result elsewhere.

Finally the non-union fields had a wage structure which rose and fell with fluctuation in the demand for coal and in the supply of labor without reference to contract dates. The general wage situation here was not uninfluenced by the wage structure in union fields. It tended to maintain a distinct wage differential below the standards they set up. It is worthy of note that non-union conditions were not confined to distinctly non-union fields. There were apt to be non-union inclusions within union territory. Sub-marginal mines or hard pressed managers might find an opportunity for profit in maintaining such wage differentials. Subsequent discussion follows the order indicated by the preceding paragraph: the Central Competitive Field; the Outlying Union

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(*) In Indiana the separate agreement for the Block Coal District made, in effect, a second basing point.

(**) Transcript of Evidence before the United States Bituminous Coal Commission. See Vo. III, p. 1632, Vol. IV, p. 2602, Vol, III, p. 1986.

Districts; the Non-union Areas.

From this standpoint of exactitude of knowledge regarding the true wage situation, it is unfortunate that the basic wage agreement in the Central Competitive Field was customarily reduced to a few basic wage determinations. Thus the pick mining rate which covered by far the most important part of wage cost in coal mining operation during the early years of Interstate Joint Conferences was fixed for the four basing points as shown for successive dates in the following table:

BASING POINT RATES FOR PICK MINING

	1886*		1897*		1898		1916		1923	
	Screened	ROM	Screened	ROM	Screened	ROM	Screened	ROM	Screened	ROM
Pittsburgh (thin vein)	$ .71	$ -	$.65	$ -	$ .66	$.4266	$ -	$.6764	$ -	$1.1164
Indiana Bituminous No. 1	.65	-	.56	-	.66	.40	-	.64	-	1.08
Grape Creek, Ill. (Danville)	.75	-	.65	-	-	.40	-	.64	-	1.08
Hocking Valley, Ohio	.60	-	.56	-	.66	.47-1/7	-	.6764	-	1.1164

	1924-27		1928	
	Screened	ROM	Screened	ROM
Pittsburgh (thin vein)	$ - $1.1164		Non-Union	
Indiana Bituminous No. 1	- 1.08		$ .91	
Grape Creek, Ill. (Danville)	- 1.08		.91	
Hocking Valley, Ohio	- 1.1164		Non-Union a/	

a/ Small group of operators in Southern Ohio - had contract with rate of 87.64 cents per ton for pick mining.

Here the original differentials for screened coal set in 1886 ranged from 60 cents in Hocking Valley to 75 cents in Grape Creek, Illinois. This considerable spread of 15 cents serves as well as any other illustration to point out the difficulties inherent in correlating wage rates with earning opportunity or with costs of production. For the labor and the expense involved in gaining a ton of screened coal in the mines at the four basing points is dependent on numerous factors - the size of the opening in the screens, the friability of the coal mined, the methods employed in extraction, and the methods of weighing or measuring the coal produced. It might easily have been true that the seeming wage differentials here prescribed were only an adjustment to cover differences in mining practices or in geological conditions and that the actual earnings and the real costs of production were substantially equivalent in the four districts. It will be noted that when the transition was made to payment on a

* Lubin, Isador, Miners' Wages and the Cost of Coal, p. 83. Other rates from study of union contract by Mrs. Charlotte Warner Fitch, of N.R.A. staff.

run of mine basis, the major part of this ostensible wage differential was eliminated. A new differential of 3.64 cents per ton between the Indiana and Illinois basing points on the one hand and those of Pennsylvania and Ohio on the other was maintained unchanged until the Interstate Joint Conference machinery broke down in 1927.

By that time material changes had taken place. The advance of mechanization through the introduction of machine cutting and later of machine loading had reduced the importance of the pick mining rates as measures either of miners' earnings or of operators' costs. Moreover, the advance of mechanization had proceeded at different rates in the four states. To a degree also the basing point which had first been selected as fields with similar mining conditions and equal strength of union organization had to some extent ceased to merit this basing point designation. Other districts had risen in importance and Hocking Valley, at least, was losing ground. The mere fact that pick mining rates at the four basing points were substantially equal no longer held the answer to questions regarding the existence of wage differentials and their extent. In any case the content of the pick miners' duties have varied widely in different fields and even among miners in the same fields. In a small mine and under early conditions the pick miner performed all the operations incidental to getting out the coal and loading it in the mine car. He was tracklayer, timberman, under cutter, shotfirer and loader. In union contracts may be found all possible combination of these duties with corresponding variations in wage rates. The detailed comparative statement of Mr. Stayton, a West Virginia operator, speaking of conditions in the Kanawha field is instructive.

> "In the Central Competitive Field the miner handles 12 inches of slate, lays down his own track and pushes his cars from the parting to the face of his room, all of which is included in the price per ton.....But in our district we pay for 12 inches of slate 98½ cents per linear yard. The company lays the track, delivers and hauls the cars from the miners' face of his room and entries. Clearly a flat advance in both of these fields would work injustice in one or the other; only a percentage advance could be impartial." (*)

To discover the actual weight of wage differentials would require precise correlation of these diverse adjustments of duties and wages.

Further difficulties arose because of the different development of mining methods in different fields. In some fields hand methods persisted and mines were small measured by output or by number of men employed. In others full advantage was taken of the advance of mechanical methods and the mines turned out a large tonnage daily and gave employment to very considerable labor forces. In the small mines little division of labor exists while in the large mechanized mines both specialization of labor and closeness of supervision have gone to lengths which are new and strange in the bituminous coal industry. The exact measurements of wage differentials under such contrasting conditions is practically impossible with any data now available.

(*) Transcript of Evidence 1920. Vol. IV, p. 2601.

In the small hand operated mines the pick mining rate is all important. Day rates are of minor significance and machine rates have no bearing on either earnings or costs. In the large mechanized mines pick mining is incidental and of very slight importance. Under special conditions a few tons may be obtained by hand mining; the bulk of the tonnage is produced by machine methods.

After the pick mining rate the Interstate Conferences have been concerned with the wages paid day men. The conference in 1898 was notable for the establishing of an eight-hour day throughout the Central Competitive Field and for setting up uniform wage rates for inside day men. The basic rate then established was $1.75 for most classes. Trackmen and timbermen received $1.90; pipemen $1.[illegible] and trappers 75 cents. "This scale was obtained by taking the average of the wages paid in all the competitive districts and reducing it to an eight-hour basis." (*)

At succeeding Interstate Joint Conferences, the practice was to make changes in the inside day rate by adding or subtracting equal amounts from the existing rates. Thus uniformity of inside day rates at the four basing points was maintained as long as the Interstate Joint Conferences continued. This meant that at these basing points men performing the same duties had equal pay. From their viewpoint no wage differentials existed. From the standpoint of the operators these uniform wages might, nevertheless, represent wage differentials. "One mine in which most of the work of laying track in the rooms, taking up floors, tunneling, etc., is done by the miners themselves will have relatively few company men underground; another in which much of the work is done by company men may have as many inside workers as it has miners. (**) When inside day rates were increased mines organized with the maximum of inside day men would find their costs of production per ton materially increased on comparison with mines where the bulk of the work was done by men on tonnage rates. This amounted to a wage differential favoring the small pick mines. (***)

However, there have been some exceptions to the rule of paying uniform inside day wages in the Central Competitive field. In Indiana the motormen rate has been higher than in the other three states. This came about as the result of an agreement between operators and miners whereby motormen were reclassified and certain helpers eliminated with an accompanying increased rate for the motormen. Southern Ohio was given a concession on inside day rates running from 30 to 60 cents per day lower than was paid in the balance of the state. This was intended to put operators in that district on an equal competitive basis with those at the Hocking Valley basing point. (****)

(*) Lubin, Isador, Opus cit. - p. 141

(**) Lubin, Isador, at supra, p. 139.

(***) Compare the testimony for the operators by Mr. C. E. Maurer. "They have a little thin seam of coal in that field where they employed 60 per cent day man and 40 per cent miners. In order to produce that coal and put it on the market they had to have a reduced wage for day men."

(****) See testimony of Mr. John Moore, President of the Ohio Mine Workers. Transcript of Evidence, U.S. Bituminous Coal Commission, 1920

The 1898 scale committee atempted to formulate a scale for outside day labor but failed due to the fact that many of these outside occupations, engineers, firemen, etc., came under craft unions not affiliated with the United Mine Workers of America. Not until 1912 did the Interstate Joint Conference take into account wages for outside day men and even then only to specify the amount of change to be made in the existing rates. No provisions were made for uniformity at the basing points and it was assumed that variations in outside wage rates, like deadwork variations, were to be continued.

This situation naturally led to a great diversity in the rules applying to these men and their wages. In Indiana, blacksmiths worked nine, and inside day men, eight hours per day. Engineers had duties to perform outside of their regular hours. In some sub-districts in Ohio certain occupations were not affiliated with the United Mine Workers of America. (*) The wage structure was even more complicated. The following table shows the varying rates in effect in 1922 for the occupation, outside common labor. (**)

	Outside Laborers (dollars per day)
Illinois	6.86
Indiana	6.85
Ohio	
Cambridge	7.22
Crooksville & Hocking	7.25
Jackson & Ironton	6.90
Pomeroy	6.60
Massillon, Panhandle, Tuscaravas & Coshocton	6.80
Western Pennsylvania	6.60

Not only was there a considerable variation in the wage scale for one occupation but the diversity in the status of outside workers resulted in considerable variation between the various classes of labor. The Illinois contract made little attempt to equalize rates and stated only that the $6.86 rate was a minimum rate, while firemen and stokers shall receive $7.25. (***) The Western Pennsylvania contract listed the following occupations with rates.

Dumpers	$6.92 per day
Ram operators	7.10 " "
Pushers	6.68 " "
Trimmers	6.86 " "
Car cleaners	6.60 " "

It further specified that blacksmiths, carpenters, rivermen, firemen and other outside labor rates were to remain as they were. (****)

In Indiana, the contract specified a flat rate of $6.85 for outside day men, with the exception of blacksmiths, who worked nine hours at a rate of $7.92 and firemen, for ten hours, at $7.356 per day. (*****)

(*) Lubin, Isador, ut supra, pp.

(**) Fisher, W. E. and Bezanson, Anne, Wage Rates and Working Time in the Bituminous Coal Industry, Appendix Table 52.

(***) Contract between Illinois Coal Operators Association and the United Mine Works of America, 1922 to 1923.

(*****) Contract between Indiana Bituminous Coal Operators Association and the United Mine Workers of America, 1922 to 1923.

(****) Contract between Pittsburgh Coal Producers Association and the United Mine Workers of America, 1922 to 1923.

The Ohio scale, for Hocking Valley, reported the following scale.(*)

First blacksmith	$7.77	per	day
Second blacksmith	7.45	"	"
Blacksmith helper	7.35	"	"
Mine carpenters	7.45	"	"
Dumpers & trimmers	7.25	"	"
Greasers & couplers	5.06	"	"
Engineers & firemen employed by the day	7.25	"	"

Again in the field of yardage and deadwork rates the diversity of actual wage rates may be overlooked if examination is not carried beyond the statements of wage contracts. The Interstate Joint Conference did not fix these rates. It was customary to determine a percentage rate of increase or decrease applicable to the existent rates at the basing points. ...ints. Similar provision was made in the district contracts. For example the wage agreement covering Illinois, effective August 10, 1932, re reads: "All yardage, deadwork and horsebacks on which a scale has been established shall be reduced twenty-five per cent from rates in effect under the contract which expired March 31, 1932." Correlating inter-d district rates in search for wage differential data would require even in the simpler field of yardage, a painstaking comparison of yardage rates for entry, room turning and break through work, giving full consideration to such factors as seam thickness, methods of mining and division of duties field by field. Thus only can the student hope to discover the true status of comparative earning potentality or of production costs.

In the field of deadwork payments it is practically impossible to measure wage differentials. Payments for such unstandardized and non-uniform tasks as cleaning up falls, and eliminating irregularly occurring impurities in coal seams are ordinarily arranged between individual miners and their mine foremen. No schedule of rates can be arranged for such unpredictable occurrences. Indeed some contracts provide that when the coal seam in a given room contains an undue amount of impurities, it shall be handled by day men and the miner affected shall be given an "average room." It is unquestionably true that deadwork payments, and yardage only in lesser degree, are a fruitful source, albeit incommensurable, of wage differentials. Hard pressed mine managers reduce deadwork payments to the minimum and chisel on yardage allowances; Liberal managers at prosperous mines especially if supported by vigorous unionism, pay considerable wage differentials at this point. Data from NRA records show that significant wage differentials might arise here. Thus a ten-month average from April 1934 to January 1935, both inclusive, shows that Maryland and Upper Potomac, with very difficult mining conditions, paid 12.5 cents per ton for yardage and deadwork out of a total labor cost of $1,295. This is 9.65 percent. Michigan for the same period paid 29 cents out of a total labor cost of $1.93 or 15 percent. Western Kentucky with wage standard based on non-union conditions from 1926 to 1933 shows for the two months - November and December 1933 - for which reports are available, about 1/3 of a cent per ton in an average labor cost of 71¾ cents per ton. This makes less than half of one percent..

(*) Contract between District #6, Ohio and the United Mine Workers of America, 1922 to 1923.

Wage rates in the outlying districts are based on those existing when the union first gained recognition. They may have been higher or lower than those obtained in the Central Competitive Field. Thus the rates in Washington, Wyoming and Montana were distinctly higher due to a higher cost of living in that region and to the existence of a generally higher wage level. In Western Kentucky, on the contrary, when a union contract was first negotiated in 1900 wage rates were considerably lower than those of the Central Competitive Field. This is explained as due to the pressure of neighboring non-union areas. These lower rates were nevertheless incorporated in the contract subject to a promise of the operators that the interstate wage level would be granted in case the union succeeded in organizing the remaining Western Kentucky mines.

Contracts succeeding the original agreement were affected by the changes made in the Interstate Joint Conference. However, because of the original acceptance of the indigenous wage rates their relation to the Central Competitive Field is by no means uniform. Nor before the advent of Code control can it be shown that the lack of uniformity had lessened rather than increased. In the remaining unionized areas Competitive pressures, e. g., had driven basic rates in the Southwest from $3.75 to $4.00 while the Indiana and Illinois Competitive rate was $5.00

The basis for this situation was stated by Mr. Clark, representing the Central Pennsylvania Field, before the United States Bituminous Coal Commission as follows: "Our agreements have been built up from a competitive standpoint and from a standpoint that filled the conditions surrounding the mining industry from an operating standpoint."(*)

"The principles underlying wage setting were pointed out with equal frankness by Mr. John Mitchell in his testimony before the Commission on Industrial Relations.

"As I say, it is impossible to determine the cost solely upon the earnings of a man, because if we were to do that, if we were to say that a man could earn $4 a day at Danville he ought to earn $4 at every other mine, because if the board fixed entirely upon wages some of the mines could not operate; the physical condition of the mine and the freight rates would exclude them from the market; so that if there be some natural condition in the mining field that makes it more expensive to operate these mines at a base point, we have to understand what the mine owners, I think, all recognize that that burden should be carried in part by the mine owner by reduced profits, and part by the miners in less wages; so that in a rough way an attempt has been made to establish our mining scales, based upon the comparative opportunities of the different mining fields and perhaps upon the opportunities of the miners in the different fields to earn their wages." (**)

(*) Transcript Vol. IV p 2854 a

(**) Quoted Report of The United States Coal Commission, 1923 Part III, p. 1047.

This is to say when plainly stated that the indigenous wage scales found when unionization takes place the net resultant of a struggle between competitive forces among which the weakness of the unorganized miners is of capital importance. The situation in the Bituminous Coal Industry with its super-abundance of productive capacity and its shrinking markets is such that in each field every mine is opened up and is operated to the fullest extent which the severity of mining conditions joined to the willingness of the labor force to accept low wages, makes possible. Moreover, the operator will sell to the most distant fields and absorb the greatest amount of freight charges which is made possible by savings in production costs contingent on extended time of operation. Whatever the wage situation, it is always correctly defended as the highest which can be maintained if the mines in operation are to be continued and miners to be employed for the established annual days of operation.

Neither miners nor operators, therefore, will consent to unionization except it be tacitly, if not implicitly stated, that the existing competitive situation is to be maintained. Thus the joint circular of operators and miners sent out in 1886 calling the first interstate conference plainly stated:

"If the price of labor in the United States was uniformly raised to the standard of three years ago, the employers of labor would occupy toward each other the same relative position in point of competition as at present. Such an advance would prove beneficial to their interests, as it would materially help to remove the present general discontent of the miners in their employment." (*)

This is to say that both parties must be assured that their opportunities for employment and for the enjoyment of wages and of profits are not to be diminished. Against any attempt to raise wages above the competitive levels established before unionization, the operators fight with the pertinacity born of justified fears for the life of their mines. These fears are frequently intensified by the spectacle of numerous bankruptcies among their business associates and rivals. Under such conditions the union officials were not inclined to push the demands for wage increase beyond the level attained in the Central Competitive Field and in neighboring outlying districts. Here then is the basis for wage differentials found between the Central Competitive Field and the outlying districts in general as well as between the various outlying districts. They were established as were similar wage differentials between the states combined in the Interstate Joint Conference, under pre-unionization conditions of intensified competition. They were embodied in wage contracts and maintained by the policy of percentage increase in tonnage rates together with fixed increases on day rates. To this wage structure and labor cost the productive and distributive organization accommodates itself. Superabundant competition forces the industry to produce and sell every ton which the wage structure allows. It is always literally true that to increase wage costs in any district will destroy the marginal and submarginal mines desperately striving to maintain a place in the industry. It must be held in mind that survival for them is not dependent on any wage level, high or low, but rather on the maintenance of the comparative wage situation under which their entries were opened and their markets established.

(*) (Evans, Chris. History of the United Mine Workers of America, Vol. 1, p. 140).

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The general wage differential so far as the non-union fields are concerned is simple in statement. Under competitive pressure the non-union operators seek to take advantage of the relatively stable and permanent wage structure embodied in union contracts and to maintain for themselves a lower wage level. As mentioned above these non-union operators may be in the heart of union territory. A notable example was the "iron clad" contract of the New York and Cleveland Gas Coal Company effective in 1896 and for some years thereafter. This contract baldly stated that the price to be paid for mining coal should be 10 cents per ton less than any other price paid in the Pittsburgh district, but it further provided that if a strike occurred in the other mines of the district this wage should be increased 10 cents per ton during such strike. (*) The report on the strike in 1910-1911 in Westmoreland County, Pennsylvania, disclosed a similar situation. Here the miners were still working 10 hours daily although unionized mines in the Interstate Competitive Field had been on 8 hours since 1898. (**) Despite this material disadvantage in hours, earnings of both tonnage and day workers were lower in the non-union mines than in neighboring unionized operations.

The wage differential controversy carried on by the union with the distinctly non-union fields of West Virginia, Eastern Kentucky, Tennessee, Georgia and Alabama is familiar to all students of coal problems. It was persecuted with increasing intensity as the development of these new fields highly favored by natural conditions and reenforced with favorable wage differentials invaded the markets of union operators and endangered the union wage structure. It was not only the lower wage but the greater flexibility of wage rates which did damage. When demand slackened these non-union areas cut wages and extended sales at the expense of operators bound to the payment of union wage scales. In times of brisk demand the non-union operators promptly raised wages and bid high for an increased share in the limited wage force. In periods of strike stoppage in union fields, these non-union mines continued production and reaped a harvest from high profits, intensive operation and abundant labor supply. However the general wage level in non-union fields was materially below the union standards. Measurement is difficult since no general wage scales exist in non-union mines. Each mine had its own wage system. Indeed "in some of them each laborer made his own bargain with the mine official and his rate was, in large part, determined by his own bargaining power". (***) A general statement covering an eleven year period is found in a work based on investigation made for the United States Coal Commission. The conclusion reads:

(*) Article by J. E. George in Vol. XII Quarterly Journal of Economics, pp. 200-201.

(**) Neill, Charles P. Report on the Miners' Strike in Bituminous Coal Fields in Westmoreland County, Pennsylvania in 1910-1911 Passum.

(***) Lubin, ut supra, p. 209.

"At the start of our record in 1912, the average rates per hour paid to day men were 30 cents in union fields, 23 cents in irregular, and slightly less than 22 cents in non-union areas. By the close of 1922, day rates in union fields averaged 89 cents, in irregular 81 cents, and in non-union 70 cents per hour. During the depression, the differences were larger than is indicated by these absolute comparisons. The maintenance of union scales in the first half of 1922 when rates in other areas decreased meant that the average hourly rates of union day men were 40 cents above the non-union and 33 cents above the irregular areas." (*)

Within this general situation of union fields, divided between the Central Competitive Field and the outlying districts, and the non-union areas, certain recognized wage differentials developed. These may be discussed under the headings: machine, freight, thin vein, and geographical differentials. Insofar as these wage differences have been consciously fixed, they are all conditioned by the purpose to maintain the principle of competitive existence for all operators and for all groups of miners. This principle, be it remembered, is of belated application. Wage scales and differentials are not predetermined and applied to mines as they are developed and as they establish markets. Rather they wait on unionization and adopt an inchoate -- one is tempted to say unprincipled -- wage structure based on nothing more defensible than competitive struggle. Once accepted these wage differentials must be maintained if certain mines are to operate and the miners there employed are to work. Otherwise stated, the maintenance of the relative competitive advantages is essential to retain the loyalty of miners and operators to the wage conference. Either party will forsake the agreement if convinced that their interests are not protected.

This was effectively stated in 1920 by Mr. H. M. Taylor speaking

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(*) Fisher, Waldo E. and Bezanson, Anne, Wage Rates and Working Time, Bituminous Coal Industry 1912 - 1922, pp. 181-182. -- "Irregular areas" are those in which "the union and the operators have waged an almost continuous struggle over the question of union recognition". There was produced approximately 10 per cent of the soft coal during the period 1912 - 1922: Non-union areas about one-third. Su. p. 33.

for the operators in the Southwestern District.

> "We have built up by collective bargaining, relative scales, so that the fields can enjoy, through competitive relations, a certain market between the fields of the Southwest against their eastern competitors. To disturb those relationships would be the elimination of many of our mining centers. These centers have a right to live, whether some people think they have or not. If disturbed we cease to exist and our miners must leave their homes and seek other fields. The operators cannot leave, because their mines are in the ground and cannot be moved."(*)

An apt illustration of these factors is found in the machine differentials. The Interstate Joint Conference at first based its wage structure on the pick-mining rate. When compelled to take account of machine undercutting it was handling the interests, at first, of a minority group. To maintain the majority competitive interests of operators and miners it set rates for machine operation which gave the managers introducing the machines little beyond a fair return on the investment in the machines. Thus the majority of miners and operators still carrying on pick mining were protected. In addition the miners operating machines made a handsome wage and the only voices in the conference dissenting were those of the, at first, inconsiderable minority of operators using machine cutters. When, nevertheless, mechanization progressed the market competition had been adjusted to the labor costs imbedded in this wage structure. It was far easier to maintain the established machine differentials than to face the disruption incident to setting up a relative wage base on an accurate scientific determination, assuming that any one party to the agreements harbored such an unusual design.

Further diversity developed as new districts were progressively brought into the unionized wage structure at various stages of mechanization and with relative rates for machine and hand operation variously adjusted. With mechanical loading added to machine cutting the mines in which geological conditions required hand operation were forced back definitely into the class of submarginal mines. As an alternative to ceasing operation entirely, hand mining rates were progressively reduced and the machine differentials had a new manifestation.

It must not be supposed that machine differentials were uniform throughout the Central Competitive Field. The basic rate for

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(*) Transcript, ut supra, Vol. III, p. 1638. Cf. views of Mr. J. B. Wilson of Oklahoma, p. 1736.

Danville, Illinois for machine mining, i.e. undercutting by machines, plus hand loading after machines, was set at 10 cents lower than the hand rate. In all districts outside Danville the differential was set at 7 cents. This "was based on the average machine differential which prevailed under non-union conditions before 1898".(*) Those differentials despite much operator discontent were maintained throughout the period when the Interstate Joint Conferences were effective. In the Indiana Bituminous district a machine differential of 12 cents a ton was maintained. Ohio had nine different differentials, as detailed in the table on the following page. Four of its 15 districts had 17.64 cents, which was the machine differential of the Hocking Valley basing point. Pomeroy and two other sections had 20.6 cents, the highest differential; Deerfield had 14.86 cents, the lowest; Crooksville 16.25 cents; Coshocton 16.6 cents; Sandy Valley had a $6.75 day rate for machine cutting. Pennsylvania had 17.64 cents in the thin vein area, 14.8 cents in veins rated as thick. In outlying districts the machine differentials are described as a "motley array running from 3 cents in some sections of the Southwest to 18 cents in Michigan. In some districts machine miners are paid on a day rate basis, while in others they are paid a fixed amount for each square foot of coal that they undercut." The table following shows these machine differentials for the Interstate Competitive field:

(*) See Lubin, op. cit. pp 107 et seq. for discussion of machine differentials.

Comparison of Hand and Machine Rates and Differentials

Pennsylvania, Ohio, Indiana, Illinois (*)

(Mine-run basis, rates in dollars and cents per net ton)

	Pick Rate	Machine Rate (Loading and Cutting)	Differential
Pennsylvania			
Thin Vein	$1.1164	$0.94	$0.1764
Thick Vein	1.0311	0.8831	0.1480
Ohio			
Amsterdam	1.116	0.94	0.176
Cambridge	1.1164	0.94	0.1764
Coshocton	1.146	0.98	0.166
Crooksville	1.146	0.9835	0.1625
Deerfield	1.195	1.0464	0.1486
East Palestine	1.180	1.021	0.159
Hocking Valley	1.1164	0.940	0.1764
Jackson	1.180	0.9774	0.2026
Ironton	1.146	0.9774	0.1686
Massillon	1.1817	0.9757	0.2060
Panhandle	1.1164	0.940	0.1764
Pomeroy	1.146	0.940	0.2060
Tuscarawas and Sandy Valley	1.146	0.975	0.1710
Indiana	1.080	0.96	0.12
Illinois a/			
District #1	1.357 a/	1.290 a/	0.067
District #2 (Danville)	1.080	.980	0.100
District #3	1.089 a/	1.017 a/	0.072
District #4	1.083 a/	1.014 a/	0.069
District #5 and 9	1.083 a/	1.011 a/	0.072
District #6	1.040 a/	.970 a/	0.070
District #7	1.041 a/	.973 a/	0.068
District #8	1.166 a/	1.080 a/	0.086

a/ Weighted rates

(*) Source: Fisher, W. E., and Bezanson, A., Wage Rates and Working Time on the Bituminous Coal Industry, appendix tables 4 and 7. These were the contract rates from April 1, 1920 to March 31, 1927.

Wage differentials based on freight differentials are deeply imbedded in the general wage set up. When Southern Illinois rose to importance in production, the field secured a 4 cent differential over Central Illinois on the pick mining rate because of the higher cost of shipping coal to Chicago, which was then the principal market for both fields. Although the marketing situation soon changed the wage differential persisted. Western Kentucky and Northern West Virginia defended their low wage scales vigorously on the score of their disadvantageous situation and greater shipping costs as compared with their nearest rivals. The tendency is to regard freight rates as inescapable and irreducible charges. Wages, on the contrary, are held subject to reduction to any extent required to enable the mines to continue operating. Earnings of miners can be supplemented by farming or gardening. And low standards of living, resultant from low wage scales, are skilfully transformed in public statements into lower costs of living. At bottom these wage differentials are based on the sincere conviction that developed mines must operate. This belief is held by miners as well as operators. In the case of the miners this conclusion has frequently been enforced by prolonged shut downs and resultant lack of a means of livelihood. Mines are thereafter reopened at any wage scale which permits operation. Such scales then become accustomed and accepted.

Thins vein differentials work counter to the freight differentials in that as adjusted they make it more, rather than less, difficult for the mines to operate. They are based on the natural belief of the wage earners that tonnage rates should be higher when more difficult natural conditions are encountered by the miners. The difficulties of gaining a ton of coal in a 2 foot vein are much greater than those met in a 5 or 6 foot seam. On principle the wage scale should be so adjusted as to make the earnings of miners equivalent in both cases. In practice the tonnage rate, while higher in the thin seam, may fall far short of completely balancing the more difficult conditions. In the historical development of wage systems numerous survivals were left not now defensible on an exact comparison of natural conditions.

Most important of these is the Pittsburgh thick and thin vein differential of $.0853 per ton. In its origin in 1902 this has been explained as a freight differential based on the dockage fees on the Monongahela River. It persisted and drew the fire of the United Mine Workers' president in the Code Hearings in 1933. He described the imaginary line drawn, put the pick miners' differential in favor of the so-called thin veins at 10 cents per ton, and stated that a corresponding differential had been granted for hand loading and machine cutting. He declared:

> "Despite the fact the operators producing coal in the so-called thick vein enjoy a differential in pick and machine mining below thin competitors in the Pittsburgh District, yet it is notoriously true

that much of the coal mined in the so-called thick vein territory is about the same in thickness as in the so-called thin vein district.

"Operators suffering for years from the effects of these differentials have sought in vain to make the tonnage rates the same throughout this area, and mine workers have complained, even to the extent of striking against a continuation of this abuse."(*)

With this may be contrasted the statement, made in 1920, of Mr. Don Rose, an operator in the Freeport seam of Western Pennsylvania. He testified that the Pittsburgh seam is continuous covering the entire district and that variation in thickness is of a gradual and comparatively steady character. It increases in thickness as one traverses it from north to south and any dividing line must be an arbitrary one. The differential originally "was established on the basis of equality of potential earning power on the part of the miners in each district." "Large investments in coal lands, development and equipment have been made, based upon the full knowledge of the dividing line and upon its bearing upon mining operations. Any disturbance of this question at this time would certainly result in substantial injury to such investments."(**)

Here is a clear-cut illustration of the difficulty of changing wage scales once the competitive pressures have expanded production by the favored districts to exploit the last vestige of advantage from the situation. For the operators dependent on the wage differential, its defense becomes necessary to existence and no historical exegesis or philosophical dissertation affects their attitude in the least degree. They are blessed with entire single mindedness of vision and purpose.

It is not difficult to point out great seeming divergence in the thin vein differentials. Thus the rate paid for pick mined coal in a 3 foot 6 inch seam is $1.08 in Indiana; $1.1817 in the Massillon District, Ohio; and $1.24 in the East Palestine District, Ohio.(***) Further "coal of this height in the Southwest Interstate Field generally carries a rate of $1.15 or more; in counties of Missouri $1.20, $1.23, $1.25 and $1.40, while in Subdistrict 2 of Iowa we find $1.21. (****) Again, 2 feet 3 inch seams in the East

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(*) Transcript of Code Hearings, pp. 330-331.

(**) Emphasis added. Transcript, Vol. II, pp. 985-6.

(***) Lubin, Opus Cit. p. 98

(****) These rates from Coal Section Study of Union Contracts.

Palestine section of Ohio of the Central Field have a $1.30 pick rate; in Michigan a $1.38 rate; and in Subdistrict 4 of Iowa the extreme rate of $1.80. Similar differences can be found by comparison with almost any other outlying district."(*) Ostensibly these divergencies are based solely on the seam thickness. In reality the wage differential is affected by other natural difficulties such as the pressence of gas or water, the folded or pitching position of the seams, the division of labor and methods of mining and cleaning the coal, not to mention the relative bargaining strength of the parties to the agreement and the historical incidents, or accidents, of wage scale development and of trade unionization. No safe conclusion can be drawn here without a most complete and painstaking comparison of all factors which affect the miners' opportunity for earnings and the operators costs of production. It might easily be true, e.g., that the wide divergence quoted between East Palestine, Ohio, and District 4, Iowa, worked out to substantial equivalence both in miners' earnings and in operators' costs when all factors were assessed at their correct value. No such study has ever been made and for the differentials quoted data is not in existence on which to base it.

Emphasis on geographical wage differentials is of comparatively recent development. Such discussion is not found in the reports of the United States Coal Commission nor in works based on these data.(**) Until that date cheif interest attached to the organizational differentials, i.e. union vs. non-union. Because the southern and the southeastern fields were of large importance in the non-union districts, this discussion had a geographical bearing. After 1914, with the growth of southern West Virginia production to competitive importance, records began increasingly to carry debates over the north-south wage differentials. While chief interest attached to this geographical controversy, it should not be forgotten that other such differentials of importance existed. The Rocky Mountain Pacific coal fields had wage scales materially higher than those based on the Central Competitive Field wage scales. After 1924 the the Southwestern Field under pressure from competing fuels broke away from union control and developed a wage scale distinctly lower than that maintained in Central Competitive territory while the southern fields had the lowest wage system of all.

While this general conclusion as to the southern wage levels is generally accepted, the precise measurement of this north-south wage differential has never been attempted. A promising start on an exact scientific study was made under Code administration with

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(*) Lubin, Op. cit. p. 162

(**) This is true of both Lubin's and of Fisher and Bezanson's books quoted above.

the appointment of a North and South Commission.(*) It suffices to mention here that extensive differences were discovered in methods of operation and in natural difficulties encountered resulting in the planning of an elaborate engineering study. One member of the commission stated his conclusion thus:

> "It is apparent that there is a difference in the services performed and the proportion employed of company men and loaders in the various districts and, therefore, a higher cost in some districts than in others for the company men. This difference in cost should be obtained and should be reflected in the piece workers' rates. The present rates are based on unlike things and unlike amounts of labor required and work performed."(**)

These suggestions were equally applicable at earlier dates.

(*) See the discussion below.

(**) NRA files. Letter of James D. Frances and suggestion for information to be obtained by Engineers, July 26, 1934.

WAGE DIFFERENTIALS AT THE CODE HEARING

The most uncompromising stand against wage differentials was taken by C. E. Hosford, speaking as a representative of the Coal Producers Association of Western Pennsylvania. His opinions have great interest in view of his present position as Chairman of the Bituminous Coal Commission. Mr. Hosford stated at the outset of his argument:

> "In my judgement, it is unfair to allow the mines of one district to work eight, nine or ten hours. Again, I say, it is unfair that one district is permitted to have one scale of wages and another district to have a different scale of wages when these two districts meet competitively in the marketing of their coal." (*)

The speaker admitted that wage differentials had existed for years and that differences in costs of living constituted a "sound economic reason" for them. But he continued:

> "Now, there is no desire to take away from any producing district the advantage which it obtains from its geographical location, nor should it be deprived of any advantage which it has through the natural conditions affecting production. If the coal seams are thicker, if there is no draw slate, if there are no partings in the coal, and from that results a greater capacity per man, thus resulting in lower costs, that advantage should be enjoyed by that district, but we submit that no district should be protected by any artificial differential.
>
> "Carrying out this theory, we submit that regardless of the district in which the work is performed and regardless of the return to the operator from that particular work or service, the wage earners in the various districts of the Appalachian Range should be on an equal basis as to hours of labor and should receive equal rates of pay. This applies just as well to the men who are paid on a piece-work basis as to those who are paid by the hour. If a motorman or other skilled laborer inside the mine receives, just let us arbitrarily say 50 cents an hour in Ohio and Pennsylvania, that same rate should be paid in the Southern fields." (**)

His conclusion was positively stated:

> "I submit that in the final drafting of the code or codes, which will apply to our district and to those other districts which are competitive with us, that there is absolutely from a theoretical standpoint, from an economical standpoint or from a practical standpoint no justification for the allowance of any differential whatsoever." (***).

Similar convictions were stated by Frank E. Taplin on behalf of the Central Coal Association. As he put the problem:

(*) N.I.R.A. Transcript of Hearing on Code of Fair Practices and Competition, Vol. III, p. 440.
(**) Ibid p.441.
(***) Ibid p. 444.

"If production and employment are to be equitably spread over the entire Greater Appalachian Range, it is vital that maximum working hours, minimum rates of pay and uniform working conditions be the same in all of the districts within this Range. The general code submitted provides for not to exceed 5 percent differential in favor of the mines south of the Ohio River as against the mines north of the Ohio River, but it is our earnest desire that for equitable reasons there should be no differential between those districts in base wages." (*).

A less extreme position was taken by the "general code" which was sponsored by a group of bituminous coal operators in the States of Pennsylvania, West Virginia, Ohio, Indiana, Illinois, Michigan, Iowa, Kentucky, Arkansas, Oklahoma, Colorado, Montana and Wyoming. In presenting this code, Mr. George B. Harrington said:

"When we first approached this subject we discussed the possibility of setting up a basic wage scale for the entire country. The many complexities which immediately arose showed the utter impracticability of such procedure and brought us to the conviction that the only solution was to arrive at some simple formula for minimum basic wages and simple formula for adjusting and conforming tonnage and other rates to the basic day rates.

"The basic rate for underground mine-workers is fixed at $5.00 for an eight hour day; for outside men, $4.00. Within the industry it is recognized that specified classifications of labor receive somewhat less than the basic wages, and certain other classifications receive somewhat more. Such basic rate of pay, however, provides a living wage for the mine-workers, and it has entered into the sale prices of bituminous coal to such an extent that the industry, with the few limitations in the clause of the Code set forth, is adjusted to such wages, or can be adjusted thereto."(**)

These minimum rates were subject to the following adjustments:

"(a) In those districts south of the Ohio River and east of the Mississippi River, and in the Morgantown and Fairmont districts of West Virginia, the minimum day rates may specify a differential below the basic rates of not to exceed five percent.

(b) It is recognized that in the States of Oklahoma, Arkansas and Texas special conditions exist, and authority is given for joint agreement between the representatives of the mine workers and the operators on the question of proper differentials.

(c) Existing higher differentials established in Colorado, Utah, Wyoming, Montana and Washington during past years by reason of higher living costs shall not be disturbed." (***)

(*) Transcript, Vol. II, p. 266.
(**) Transcript, Vol. II, pp. 235-236.

(***) Proposed "General" Code of Fair Competition for the Bituminous Coal
9837 Industry, p. 4.

With these adjustments the United Mine Workers were in agreement. However, having accepted the cost of living principle as a justification for the higher wage levels of the Rocky Mountain and Pacific territory, their representative, President John L. Lewis, was at pains to show that a lower cost of living did not constitute a defense for the lower wage scales of the Southern fields. (*) He argued that lower wage levels required southern miners to live on a lower standard and emphatically stated that such evidence as exists indicates that very possibly the cost of living, for an equivalent standard of living, is higher on the average in Southern than in Northern communities. (**)

A paragraph may be quoted:

> "As to the question of differentials within districts, attendant upon tonnage rates, it is the expressed desire of the United Mine Workers of America that in the district conferences created for the purpose of establishing tonnage rates comprehending a condition of fair competition within districts and with competing districts, that the conferees should apply themselves most diligently to the task of eliminating these absurd internal differentials, and make secure to the tonnage worker a minimum wage at least equivalent to the minimum rates for underground day workers." (***)

In the Code presented jointly by the Northern Coal Control Association and the Smokeless and Appalachian Coal Association, labor costs in the production of coal were called for which "make it possible for the producer to meet, on a comparable price basis, the competition of other fuels and other sources of energy, such as oil, natural gas, wood, anthracite, and hydro-electric power."(Article V) "Firm differences of opinion among the represented groups" developed on the question of other district wage differentials. These operators set forth detailed wage scales, evidently based on wages in effect. The standards set were distinctly below those of the general Code. For Pennsylvania and Ohio the maximum wage for inside day men was 50 cents per hour applying only to machine runners, motormen and rock drillers. Most of the important inside workers had 48 cents per hour while helpers rated 43 cents. By the Smokeless and Appalachian Association the maximum set for inside day men was 45 cents per hour; the bulk of occupations had 43 cents, helpers 38 cents.

The Rocky Mountain Pacific group of operators had agreed on a code containing general principles. When it came to wage standards, however, each of the Associations concerned submitted its own wage scales. These were regularly those in effect in the district covered. Most frequently the wage agreement with the United Mine Workers was quoted in full and made a part of the Code, basic rates generally ranging upward from $5.00 per day. The Montana district, which was recognized to have the highest wage rates, paid miners, timbermen and tracklayers $5.80 per day. Bratticemen, shotfirers, drillers, team drivers, pumpmen and head cagers were rated from $5.70 to $5.75 per day.

(*) See this agreement, Transcript of Hearing, pp. 337 et seq.
(**) Ibid p. 337.
(***) Transcript, Vol. II, p. 334.

The Southwestern Coals Association in a written brief (*) presented by its President, Mr. W. C. Shank, explained the "special conditions" existing in this area as due to the exceptional competitive pressure exerted by oil and gas competition. Wage scales, as proposed in the Code submitted, seemingly were based on the current rate of $3.75 per day for inside day men. In four of the seven districts as shown in the insert following, inside day men were rated at 44 cents an hour or $3.72 for an 8-hour day; outside day men at 41 cents, except in one case 40 cents. Two districts, both in Missouri, presented rates of 37½ cents inside and 32¾ cents outside per hour. The McAlester and Wilburton districts of Oklahoma were exceptional, proposing 47 cents per hour for inside day men and 39 cents for outside work.

Proposed Minimum Basic Day Rates (Cents per Hour)
Presented by Operators in Kansas, Missouri
and Oklahoma

	Cherokee & Crawford Cos., Kans. Barton Co., Mo.	Lafayette County, Mo.	Ray & Clay Cos., Mo.	Randolph, Adair & Macon Cos., Mo.	
				Shaft Mines	Strip Mines
Inside	44	44	44	37½	-
Outside	41	41	41	32¾	41

	Henryetta & Tulsa Districts, Okla. Shaft Mines	McAlester & Wilburton Districts Okla.	Boone, Bates, Linn & Vernon Cos., Missouri. Shaft Mines
Inside	44	47	37½
Outside	40	39	32¾

Alabama coal operators presented a code through the Alabama Mining Institute and their case was presented before the Hearing by Mr. Forney Johnson. They complained of intense competition by oil, gas and hydro-electric power with an imminent potential competitor in the T.V.A. development. Further they called attention to their difficult mining conditions and to the necessity which they were under of washing three-fourths of their coal. They found some excuse for their low wage levels in the location of their mines in rural surroundings allowing miners to supplement their incomes with farming, gardening and canning operations. Mr. Johnson described the "grave condition of the coal industry in Alabama" with "an actual loss in corporate income per ton of coal mined of 23 cents, or $112.00 per man employed", and spoke of the "shocking condition of destitution and unemployment in the Birmingham area." (**)

(*) N.R.A. Files, B.C.S. 13, Minutes and Exhibits Coal Code Hearings, August 1933.

(**) See the presentation of Forney Johnson, Transcript, Vol. III, p.463 et seq. Passim, also the Letter attached to the "executed counterpart" of the Code from the officials of the Alabama Mining Institute.

Near his conclusion, Mr. Johnson asked "the National Recovery Administration to bear in mind that the coal mines cannot pay wages at all in excess of the rates proposed by the Code and cannot continue to pay those rates by selling less coal than was sold in 1932; that effective increase of the competition from other fuels and hydro-power is inevitable, and that every fraction of a cent forced upon the cost of Alabama Coal accelerates the substitution of the competing fuels, shortens the Alabama coal radius and curtails its tonnage and its labor."(*) The proposed wage rates even in the light of the accompanying discussion setting forth competitive conditions seem painfully low. The minimum hourly rate for inside workers was to be 30 cents per hour or $2.40 for an 8-hour day; for outside workers (other than slate and sulphur pickers) the hourly rate was to be 25 cents. Workers who on June 16, 1933 were paid in excess of the lowest price class were to be given higher rates "based on the existing average differentials over minimum" wages.

Thus the range of basic wages proposed for major geographical divisions during the Code hearings ranged from $2.40 per day for inside skilled labor in the South to $3.75 per day in the Southwest; $5.00 in the Central Competitive Field and the regions directly affiliated thereto, and $5.25 to $5.80 in Rocky Mountain and Pacific mining fields.

In the testimony of representatives of the Coal Trade Asscciation of Indiana there occurs instructive comment on the wage differential situation between Illinois and Indiana. In both States wage agreements with the United Mine Workers had been maintained practically ever since 1898. But even during the continuance of the Central Competitive Field negotiations each of the states "had local rates of pay and conditions of contract that differed from those in the other states". After such negotiations ceased, contracts were continued in Indiana which were "entirely independent of and without reference to contracts in other districts". Since the current contract did not terminate until March 31, 1935, an attempt to standardize rates met certain difficulties. The basic wage rate in the Indiana contract was $4.57½ per day. A new basic rate of $4.00 was proposed. The basic rate generally suggested for the area was $5.00 per day.

Illustrations will indicate the difficulties in appraising the effect of divergent wage systems on potential earnings or labor costs of production, i.e., on wage differentials. In the Illinois scale tracklayers, bottom cagers, drivers, trip riders, grippers, water haulers, machine haulers and timbermen were paid $5.00 per day; helpers had $4.75. In Indiana the minimum rate of $4.57½ applied to helpers as well as higher skilled men. It was a minimum, not a basic, wage. Despite the seeming difference of 42½ cents in the daily wage for these inside workers, the Indiana spokesman found the average hourly rate in Illinois to be 59 cents as compared to 57 cents in Indiana. Again the Indiana outside minimum day rate was $4.20 applying to sulphur pickers as well as others; the general Illinois rate was $4.50 but sulphur pickers had but $3.00. Machine workers had the following comparative wages:

(*) Transcript ut supra. Vol. III, pp. 495-6.

	Illinois	Indiana
Cutting machine operator and helper	$ 7.00	$ 6.75
Shearing machine operator and helper	6.00	6.75
Drillers	5.75	6.15
Loading coal on conveyors	5.70	6.75

These rates are said to average 76 cents an hour in Illinois and 83 cents in Indiana. But obviously such averages have little meaning. A proper weighting of such rates would require complete knowledge of the relative importance of these operations in the two States and, indeed, in each mine studied. What machine mining meant in the potential earnings and in the actual cost of operation in each State would depend on the relative advance of machine mining, the relative effectiveness of the mechanical set up and the importance still attaching to pick mining. No such analysis was attempted. It may safely be asserted that such a precise measurement is impossible. (*)

The Code hearings developed also two regions in which a peculiar triangular competitive relation had existed for some time besides a considerable number of submarginal areas presenting pleas for wage differentials based on a variety of handicaps. In most cases, however, there was evidence that these areas were affected by the advance of mechanization and were in danger of falling victims to a belated manifestation of the Industrial Revolution. Quite regularly the representatives of these mines placed emphasis on their ability to furnish employment because of their reliance on hand methods. They had confidence that the N.R.A. would support their cause because of its intent to better the direful conditions of unemployment which had had a large part in calling that agency into being.

The older of the triangular competitive set ups was composed of Western Kentucky whose stern conflict with mines in the Central Competitive Field brought crushing pressure on an outlying part of the Western Kentucky coal seams which by an accident of political map drawing was included in Indiana. This was the Warrick and Vanderburgh Counties area. Closely parallel was the competitive situation between Iowa and Missouri and a coal field in Wayne and Appanoose Counties of Iowa, which on geological and coal marketing considerations, was associated closely with the Missouri coal field.

The situation in the West Kentucky triangle, at the time of the Code hearings, had developed in the course of the breakdown of the Jacksonville Agreement. The West Kentucky wage agreement with the United Mine Workers lapsed in April, 1925. The basic inside day wage rate in effect under the contract had been $6.85, comparable to $7.50 in the Central Competitive Field. After the Western Kentucky operators went non-union, they put into effect a scale of $4.09 per day. This meant a wage differential under the Indiana rate of $3.41 per day. With the putting into effect of a $6.10 day

(*) See the testimony of Mr. Charles G. Hall, Transcript Vol. III, p. 600, and of Mr. Harvey Cartwright, Ibid p. 623.

rate in Indiana on November 1, 1928 after the strikes resulting from the breakdown of the Jacksonville Agreement, Western Kentucky is stated to have reduced their wage scale progressively. A rate of $2.50 was quoted as a maximum when the Code Hearings were in progress. (*) In Indiana, on September 10, 1932 the inside skilled labor rate had been set at $4.57½ per day. This statement is substantially in accord with the evidence of Mr. C. F. Richardson, who represented the Western Kentucky Coal Association. He stated that "since 1924 the differences in wages as between Western Kentucky and Illinois has exceeded $2.00 per day". Under questioning he quoted the current wage for inside workers at $2.58 per day; for outside at $2.24. Both rates had been increased under the stimulus of the President's Reemployment Agreement - the outside rate from $2.11. (**)

Mr. Richardson's apology for these wage rates was based primarily on adverse freight differentials. Western Kentucky operators were hampered by restricted home markets. Whether they attempted to ship to the south, west, north or east, they encountered competition from fields with lower transportation costs. Kentucky coal did not store well. Seams were narrow, production largely by hand labor, and conditions generally unfavorable for mechanization. Favorable factors were stated to be that practically all the employees were native born Kentuckians, that safety records were unusually good and that the mines were surrounded by small farms allowing the workers to supplement mine earnings with farm work or through the cultivation of gardens. Despite the low wages and low labor cost per ton, Mr. Richardson declared that "during the last five years Western Kentucky had produced and sold coal at an actual loss". In 1929, 128 railroad mines were in operation; at the time of the hearings the number had fallen to 60.

The effect of these wage reductions on the mines in Warrick and Vanderburg Counties of Indiana was stated by Mr. William R. Bootz for the Southern Indiana Coal Producers Association. Although geologically their coal seams were an extension of the Western Kentucky measures, the Southern Indiana operators had been included in the Central Competitive Field wage agreements by virtue of their geographical situation. At the time of the Code Hearing, the Association comprised 11 companies operating 11 hand loading mines. Roof conditions were described as bad, requiring excessive timbering, and destructive competition was encountered from small wagon mines paying wages of $1.50 per day and making delivery by trucks. Under pressure of the Western Kentucky competition, most of the railroad mines in Warrick and Vanderburg counties had been closed preceding 1926. At that time, as stated by Mr. Bootz, an effort was made to secure a wage adjustment from the officials of District No. 11 of the United Mine Workers. This effort failed. "Then voluntarily," said he, "our employees solicited these companies to negotiate. Each year since 1926 our employees, through representatives of their own choosing, have made wage contracts with our companies." These contracts evidently provided severe reduction of wages in order to enable the companies to operate. At the hearing the existing wage scale was stated to be $1.50 per day at some mines and $2.50 at others where the men worked in excess of eight hours.

(*) See the testimony of William R. Bootz, representing the Southern Indiana Coal Producing Association, Transcript, Vol. IV, p. 618.

(**) Transcript, Vol. III, p. 576 and p. 582.

Basic wage scales, as proposed in the Indiana Coal Operators Code at the Code Hearings, were $3.60 per day for outside labor and $4.00 for inside labor. To these rates the Warrick and Vanderburg County operators assented. The Western Kentucky Code made rates for common labor - outside at $2.24 per day; inside at $2.64. There was a further provision that "skilled labor shall be paid according to the custom of the mine". This means lack of uniformity in the rates for occupations on which wage scales are customarily based and renders impossible any direct comparison with Indiana rates.

The second triangular situation displays an almost exact parallel to that just discussed. Missouri fills the role of Western Kentucky, Iowa of Indiana, and Wayne and Appanoose Counties of the Southern Indiana operations. The wage differential situation built up in the three areas, as stated in the Code hearings, ascribed the first move to the Wayne and Appanoose operators, who in 1927 withdrew from the Iowa Coal Operators Association and established a $5.00 basic wage under open shop conditions. They did this according to the statement of their spokesman, Mr. Jake Ritter, (*) at the hearing, although they were highly favorable to collective bargaining. In October 1928, the other Iowa fields made a new contract nominally at a $6.10 basic day rate. As explained by Mr. George Heans, however, an adjustment was made between tonnage rates and day wages, in the interests of an equitable division of pay. Tonnage rates were reduced 14 instead of 20 per cent; day wages were set at $5.80 rather than the $6.10 standard of Illinois. (**) At the same time Northern Missouri operators had established a basic day wage rate of $5.00 under open shop conditions. In 1931, Wayne and Appanoose operators made a contract with the United Mine Workers for a $5.00 basic rate which they interpreted to mean recognition of a $1.10 wage differential under the Iowa rate. Missouri also made a contract with the union at this time which carried a basic rate of $3.75. When the Iowa contract terminated in 1933 it was renewed but with a reduction in the day rate. This reduction was nominally to $5.00 but the 30 cent adjustment in favor of tonnage men was retained making the basic wage $4.70. The union refused to grant any differential to the Wayne and Appanoose operators and they were again on an open shop basis at the time of the hearings.

The spokesman for these operators stated that the coal seams exploited in Wayne and Appanoose Counties were exactly the same as those in Northern Missouri. They were much thinner than the Iowa seams. As a result of extensive brushing and of the presence of excessive quantities of impurities in the coal, about a third of the material hoisted was waste. Methods of mining were different from those used in Iowa fields where the coal was shot down. In Wayne and Appanoose the coal, after

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(*) Transcript Vol. I, p. 200 et seq. See also the data presented in his letter of transmittal attached to the Code submitted.

(**) Transcript Vol. IV, p. 643.

being undercut, was wedged down or allowed to break down under the pressure of overlying strata.

A passage from the presentation of Mr. Heaps of the Iowa Operators Association may be quoted here because of the light it throws on the relation of mechanization to the wage differential problem in this field. Said Mr. Heaps:

> "It might be well to call to the attention of the Administration here and now that unless something is done to readjust the relationship between hand and mechanized mining in this country, it will be only a short time until hand mining will disappear. Miners now employed in many communities of the land, such as Iowa, will be forced to seek some other kind of labor and all other allied labor serving these mines will be eliminated, leaving mechanized mining with its extremely low use of man power in undisputed possession of the industry." (*)

The proposals for wage rates submitted with the Iowa Coal Operators Association Code followed those of the Des Moines Agreement closely. Thus the minimum pay for basic inside occupations was set at 58¾ cents per hour, or $4.70 for an 8-hour day. Outside workers, except slate and sulphur pickers, were to receive $4.00. Aside from these definite rates the Code carried the following blanket clause: "All other classes of labor not specified above, shall be paid the rates of wages set forth in the present Des Moines Agreement."

The Wayne and Appanoose County operators contented themselves with submitting the "general code" with which they expressed themselves as "in full accord", except for a proposal to add to the list of minimum rate adjustments in Article IV the following:

> "Recognizing that due to mining conditions in Appanoose and Wayne Counties in the State of Iowa, this field is entitled to a differential below the basic day wage in effect in the other fields in Iowa, the minimum day rate for the Appanoose and Wayne Counties, Iowa, field may specify a differential below the basic rates of $1.10 per day." (**)

Such a differential would place these Counties' basic wage at $3.60 per day which would give them a 15 cent differential below the Missouri union rate. The operators from that State did not appear at the Code Hearings and presented neither code nor wage proposals. Seemingly they were content with their union wage agreement, which was the adjustment

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(*) Transcript, Vol. IV, p. 646.

(**) President Ritter's letter of transmittal, N.R.A. files.

implicitly proposed by the minimum wage adjustment proposals of the general code.

For convenience and brevity the various sub-marginal areas will be discussed in turn, stating so far as information is available, the conditions alleged to furnish justification for wage differentials and the wages proposed.

A. Southern Ohio Coals, Inc. presented a code but seemingly was not represented at the Hearings nor did they send in a written brief. The district is included here because of the considerable day wage rate differential maintained in its favor for a long period, as mentioned above, and because of the low level of the minimum wages proposed. These were quoted from the agreement for Hocking, Crooksville and Pomeroy Counties effective June 15th, 1933. Pickmining rates were 53 cents per ton; basic rates on inside day labor $3.28 per day; for outside labor $3.12 per day. It should be mentioned that these proposals were to govern only until a "uniform state-wide wage scale was negotiated or federal legislation is made effective". Perhaps it is justifiable to assume that the members of Southern Ohio Coals, Inc. anticipated that in either event the customary wage differentials would be retained.

B. The case for the Georges Creek and Upper Potomac region was presented by the Coal Control Association for the area. This group subscribed to the Code presented by the Northern Coal Central Association and the Smokeless and Appalachian Coal Association with the addition of special minimum wage scales. The Georges Creek coal field of Maryland was first operated in 1832. Its famous "Big Vein" is described as practically exhausted except for second and third mining to recover the pillars left in the original mining. This obviously means difficult and expensive conditions. Other veins, Tyson and Bakerstown, are thin. The former lies above the Big Vein and the rock measures have been broken and crushed because of the earlier removal of the underlying coal. The Upper Potomac field is in mountainous territory, which is sparsely settled and its mines are small. Seventy-eight per cent of the coal is hand mined. It is of inferior quality. The coal seams include numerous dirt partings requiring careful preparation. In the markets this coal is subject to a considerable price differential, exceeding 14 cents per ton when compared to Central Pennsylvania coals generally. Complaint was made also of the lack of local markets and of handicaps due to freight differentials. Spokesmen for the field claimed that "a lower wage differential is necessary, has always been in effect, and will always be necessary". (*)

(*) Brief presented by Andrew B. Crichton, N.R.A. files, B.C.S. 13, Exhibits and Minutes.

Minimum wage scales proposed carried $3.44 per 8-hour day for basic inside labor; $2.68 for outside workers. There were further statements to the effect that "all skilled labor not classified should be paid according to the custom at the mines" and that "minimum rates for piece work in each district shall conform to these hourly rates of pay and be uniform as that term is usually applied within each district".

C. The Preston County field, while a part of the Northern West Virginia district, is adjacent to the Georges Creek and Upper Potomac Field and somewhat similar in the character of the difficulties encountered. The operators were organized in the Preston County Coal Operators Association, and presented a code and brief. They desired to administer their code independently rather than to come under the control of "operators functioning at a distant point, who have no personal knowledge of the local conditions and practices in Preston County". They stated further that their members "by choice and by necessity were not accustomed to mingle with men of large affairs and from past experience could not expect to receive" the amount of attention desirable in administering their affairs.

Coal seams in the County average 4 feet in thickness. The coal produced was described as distinctive in analysis, ranking midway in volatile content between that of the surrounding mining sections of West Virginia and that of Western Pennsylvania and Ohio. It is sold by wholesale coal merchants, jobbers or active agents in the coal trade. "The mines do not have sufficient production to contract any large tonnage". Hence "practically all this coal is sold from day to day to relatively small consumers and practically each car is sold as a separate transaction". It was alleged that a 20 per cent price differential was necessary to sell Preston County coal in competition with the higher quality high or low volatile coals. Miners were all native born and their families had been residents of the County for generations. The coal mines were practically the only industry in the County and upon their continued operation 10,000 people depended directly for a livelihood and an equal number indirectly. It is implicit in the discussion that hand loading is the regular practice.

On the basis of these handicaps it was claimed that wage differentials of 20 per cent were required and that such a wage adjustment was of long standing. Definite wage scales were stated in the code with a maximum rate of $3.16 for an 8-hour day quoted for motormen; $3.00 for grades of inside labor upon which basic rates are usually established; outside labor at $2.75 per day and 40 cents per net ton for pick-mining.

D. With the discussion of conditions in Somerset County, Pennsylvania, may conveniently be grouped a brief received from a group of operators in Cambria and Johnstown Counties. The Somerset County Coal Operators Association was represented at the hearing by Mr. J. S. Brennen, who stated that coal produced in the County was shipped "almost entirely eastbound". It met keen competition from southern producers and was in general so friable as to be unsuited for screening and sizing. When sold as run of mine, it was so small in average size as to necessitate its sale in competion with screenings from competitive fields. The field was developed under these handicaps and a "labor differential of almost the

same extent has normally existed". Even so the district had "lost more than our share of tonnage in the distressed period". (*) The presentation concluded by "respectfully requesting that (the County) be given continued advantage of its geographical and competitive situation, recognizing our usual differential under Central Pennsylvania, and placed on the same basis as our Southern low volatile competitors - five cents per hour under the Central Pennsylvania scale, tonnage rates in proportion."

A group of ten operators in Cambria and Johnstown Counties presented a brief distinctly legal in phraseology. So far as its argument is pertinent here, it assailed the Code presented for the Central Pennsylvania district, alleging that the wage scale proposed represented a severe discrimination against pick mines where the coal was hand loaded. Comparisons of machine differentials effective in Western Pennsylvania were declared to show a much more favorable wage situation for hand operated mines. The attorneys contented themselves with arguments to prove "grossly unfair and discriminating differentials". No positive statement of proposed rates was given.

E. The producers of hand-mined bituminous coal in Hamilton, Sequatchie, Marion, Bledsoe and Rhea Counties in Tennessee and in Walker and Dade Counties in Georgia "finding themselves at variance with the proposed code of operators of large mechanical mines situated in northern Tennessee and in the States of Kentucky and Alabama" presented their own code and were represented in the hearings by Mr. H. J. Weeks. No formal organization existed but the letter of transmittal was signed by ten operators. They claimed for their product a relatively high fuel ratio, from 2 to 3½ as compared to 1½ to 2 on competitive coal. The mines are old, situated in a district of small towns with a permanently located native born mining population. The thinness of the seams and the small size of the operation make it uneconomical to mechanize nor will the result warrant the investment. "With one exception these mines had never been unionized or connected with a national labor organization and that exception no longer had an active union." The operators claimed that these small mines have operated "a full week of 5 or 6 days of 8 hours each, except during the summer months for the past three years". They concluded:

> "It is impossible for a hand operated mine of 200 ton capacity a day to pay the identical wages that a mine as far distant as 150 miles with a capacity of from 500 to 5,000 tons per day. If such a code and such a blanket wage provision is enacted in this hearing it will be but a continuation of the alliance between the big shipper and the railroads that has been existing in the past."

The reference here was to the freight rate situation which they claimed had set up a barrier placing their coal at a disadvantage in the Chattanooga market.

The wage scales proposed are small compared with those for other areas. They must be judged with reference to the fact that these mines are operated entirely by man and mule power. Aside from the pick miners there is "no other skilled labor in the mine". The pick mine rates varied

(*) Transcript, p. 155.

from 45 cents a ton in coal over 36 inches in thickness to 75 cents a ton for coal under 24 inches. Unskilled labor both within and outside the mine was to have a minimum wage of 25 cents an hour. Skilled labor outside the mine "such as blacksmiths, engineers, electricians, the prevailing scale for such work as adopted in their profession in the nearest locality". (*) Painfully low as these wages seem, it should be noted that they were stated to be "30 to 50 per cent above the present scale".

F. The Code jointly submitted by the Coal Producers Association of Illinois and the Progressive Miners of America was stated to be "in fundamental principles exactly the same as the General Code. The majority of the members of the Association were hand loading mine operators. That fact seemed to mark the reason for splitting from the Illinois Coal Operators Association. The effective field of the new Association was in Saline, Jackson, Williamson and Gallatin Counties, but they had ambitions to develop state wide membership and wage agreements. In this ambition they were actively supported by the Progressive Miners Organization. In the four Counties named above, there existed a further operators' organization composed of small producers, known as the Off Railroad Coal Mine Operators. Since these mines depended entirely on trucks and wagons for transportation and did not have access to large markets, they believed that they should have a wage differential of 20 per cent under that of the large operators. They set their minimum basic wage at 50 cents per hour for inside men and "an equal proportionate wage for tonnage men".

The Coal Producers Association and the Progressive Miners succeeded to a contract made with the United Mine Workers in August 1932. This had a basic wage of $5.00 per day. A special adjustment, however, was made by those organizations applicable in Saline County. Here the coal seams were relatively low, ranging from 4 feet 6 inches to 6 feet. Neighboring counties had coal from 6 to 12 feet in thickness. In Saline County there was further difficulty because of the presence of draw slate from 1 to 18 inches in thickness, which came down with the coal and made a difficult problem in loading clean coal. Two companies in the County had a mine each completely mechanized; other mines were partly mechanized. The contract entered into April 1st, 1933, stated that in consideration of the removal of all mechanical loading devices from each and all of said mines "the scale, salary and wages, and all payments for wages or services or earnings of the employees ..... shall be ten per cent less than that provided in the joint contract". (**) The result of this adjustment was said to have been both an increase in employment and a rise in average daily earnings as compared to the result under mechanized operation.

(*) Testimony of Mr. H. J. Weeks, Transcript Vol. I, p. 175, Letters of transmittal and code, NRA files, B.C.S. 13.

(**) Transcript, Vol. III, Testimony of W. C. Kane, pp. 536 et seq. Coal Producers' Association Code, p. 13.

G. The St. Clair and Madison County, Illinois, Coal Operators' Association accepted the Illinois Coal Producers' Association Code with certain modifications. Members of this Association for the most part operated truck mines tributary to the City of St. Louis. Most were hand operated. It was stated that "the hand method of mining requires five men while strip mines produce the same amount of tonnage withone man and mechanized mines with 2½ men. Markets were distinctly local, "90 per cent of the production being sold within an area of fifty miles". These operators had not customarily dealt with unions and desired such local administration as would allow continuance of local control and wage agreements. (*)

H. For convenience two other submarginal areas in Illinois may be grouped here. The Vermilion County Small Coal Operators Association presented through their Code Committee a code based on that resulting from the Chicago meeting of operators. They aspired to represent 113 mines classed as "non-shipping mines" whose business was confined to local trucking and wagon trade. It will be noted that their territory is that of the Danville basing point under the Interstate Joint Conference machinery. These small operators proposed for adoption the minimum rate of pay set forth in the state contract between the United Mine Workers of America and the Illinois Coal Operators Association. This was to be conditioned upon "the established relative competitive wage scales in the several districts of the country" - a proviso in considerable need of clarification.

The case of the Prairie State Mining Company, located at Granville, Putnam County, Illinois, was presented by Mr. Ward Guthrie. (**) He claimed for this company a 20 per cent differential below the "rates prescribed for machine operated mines in the central region". This was based on the difficulty encountered in operating by hand methods in a 3 foot to 3 foot 6 inch vein of coal located between two strip mines. He reenforced his argument by reciting the unfortunate recent history of the mine which was closed for the seven years from 1923 to 1930. The mine was the only industry in Putnam County and furnished employment to a number of men from 60 to 75 years of age. A scale of wages was quoted of $1.00 per ton for pick miners, $4.00 for an 8-hour day for "bottom laborers" and $3.50 for top laborers. The conclusion of the plea reads: "Denied this exception as to wages, the only other alternative is the closing of this property with the result that over half of the miners now employed and receiving living wages will be left destitute and because of age, unable to get work in other mines or industries."

I. The Littleton, Colorado, Coal Operators Association composed of three small coal companies was advised by the Northern Colorado Coal Producers Association, within whose territory their operations were included, "that due to the difference in situation, mining operations, the coal vein and other causes", they should not join the general association.

(*) Testimony of Mr. C. G. Stiehl, Transcript Vol. III, p. 450.

(**) Transcript, Vol. III, p. 446 et seq.

Accordingly, they presented their own code and proposed the scale of wages currently in effect for adoption.

This scale carried a basic inside wage for day workers of $5.00; $4.00 for top men; 66 cents a ton for pickmining; 52 cents for machine loading and 36 cents for shovelers. The distinctly submarginal position of these mines is evident on comparison of these rates with those in the Northern Colorado Coal Producers Association wage scale. While the basic inside wage agrees at $5.00 per day, most classifications of top day labor drew $4.50 per day; pick miners had 69 cents a ton; machine loaders 55 cents and shovelers 45 cents in the Louisville district; 36 in the Erie and Frederick districts.

Wage Differentials in the Code as Approved: As noted above the final formulation of the Code and the setting up of basic minimum day rates in "Schedule A" waited upon the conclusion of the first Appalachian Agreement. The extreme pressure for this settlement led to the adoption of certain compromises on wage differentials which it was later declared were never meant to be permanent. This was notably true of the troublesome Northern West Virginia differential. The area covered by the Appalachian Agreement included all the territory of Division I except Western Kentucky and Michigan. It applied to districts producing approximately 70 per cent of the tonnage of bituminous coal. Adding to this basis the western states in which there was general agreement that existing high wage levels should be maintained; the three states of Division II, in which the union contracts furnished an acceptable basis for minimum wage standards; and the Southwestern states, where the competition of other sources of energy enforced the current wages despite their low levels, made the coverage whether measured by fields, tonnage or by employees so large that immediate action became feasible. Aside from Division III which furnished a knotty problem, there remained only some submarginal areas and some districts intermediate between major fields in which minimum rates must be established. For this work the districts with determined wages furnished points for comparison which greatly facilitated the work of N.R.A. officials.

It will be helpful as a point of departure to get in mind the wage differentials included in the districts first settled. The solid basis for the Appalachian negotiation was found in the union contract areas maintained in Division II. Rates in these three states, however, were not uniform. (*) Illinois had a $5.00 inside day rate and an outside rate of $4.00. While no other district had exactly the same basic wages, these rates, nevertheless, have some pretensions to be regarded as the basic wages of the Code regime. The technical staff of the Bituminous Coal Section reported: "in our judgment (it is) best to suggest the rates of (Illinois-Indiana) as a range". As noted in Chapter II it was to these levels that Amendment No. 1 attempted to raise the Northern Appalachian districts, and it was from this basis that concessions to the Southern Appalachian districts and to Divisions III and IV were measured. The current rates in the other states of Division II had modified the $5.00 standard. In Iowa, as stated above this affected only the inside rate and was with intent to equalize earning opportunities of day men and tonnage men. The inside day rate had been reduced to

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(*) See Schedule A as approved and Table I appended to this Chapter which gives the comparison between hourly wage rates for Inside Skilled Labor and Outside Common Labor for each district with every other.

$4.70 and countervailing increase made in the tonnage rates. In Indiana the inside day wage was $4.57½ or 42½ cents per day below the Illinois standard; outside day wages on the contrary were $4.20 per day or 20 cents higher. The discussion at the Code hearing related above shows that Indiana, after the breakdown of the Jacksonville Agreement, had pursued an independent course. Her rates were not directly comparable with those for Illinois since the occupational coverage of various rates differed materially.

In the area covered by the new Appalachian Agreement were comprehended three wage levels. District A, including Pennsylvania, Ohio and the Panhandle district of West Virginia by union agreement, and Michigan, through the efforts of the NRA officials, took $4.60 for inside day workers and $3.60 for outside. Michigan fields at the time were idle due to a strike. In this settlement the pre-existing rates were reduced from a $5.00 basic level. Union spokesmen later declared that their district was the only one in the United States in which the miners were required to take a wage reduction below the rates of April 1, 1933. (*) Northern West Virginia, District B, had a three cent per hour, or 24 cents per day, wage differential below District A. This was the wage adjustment proposed in the Appalachian Code. (**) The technical staff of the Bituminous Coal Code Section recommended that it be tentatively adopted for a three months period. The same recommendation was made for the North-South differential of 40 cents a day applied to both inside and outside workers. The "South" here is District C including Southern West Virginia, Eastern Kentucky, Upper Potomac, Maryland, Virginia and Northern Tennessee.

Division V whose union rates, as a general statement, were covered in as Code rates, had a considerable range of wages rising from the $5.00 inside and $3.75 outside of Northern Colorado to $5.63 inside and $4.82 outside in Montana. Exceptions to these high standards are found in the district directly affected by the competition of the Southwestern States. District K made up of New Mexico and Southern Colorado agreed with Northern Colorado in outside rates but had $4.48 and $4.44 respectively for inside skilled labor. The lignite districts of North and South Dakota, also, had the exceptionally low rates of $4.00 inside and $3.20 outside. This was not a competitive matter but rather due to

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(*) Transcript of Hearing, March 28, 1934, p. 231.

(**) Protest of Northern West Virginia Subdivision, October 3, 1934, p. 3 et seq.

the low heat value of the fuel mined in those states and the highly seasonal period of operation.

Division IV rates of $3.75 and $3.28 were simply covered in to Code rates from the union agreement without discussion and, judging from later developments without much satisfaction to any interested group. At this time and later the extreme pressure of competing fuels constrained the adoption of this result. "It is recognized", said the Technical Staff, "that in the states of this area special conditions exist, and authority should be given for joint agreement between the representatives of the mine workers and the operators on the question of proper differentials".

Following the advice of the same group, the NRA representatives took up the various sub-marginal areas as special cases. The greatest difficulty was found in reaching a settlement for Western Kentucky and for Alabama. After a series of conferences between representatives of Western Kentucky, Indiana, Illinois and Iowa during which bitter complaints were voiced against the "cut throat competition" of the Western Kentucky fields based on a low wage cost, a compromise settlement was reached at $4.00 inside and $3.00 outside for that area. In Alabama no agreement could be arranged. Spokesmen for the producers called attention to the fact that 50 per cent of their output was sold on contracts with the railroads and that these contracts had no wage rate increase release clauses. At the highest the operators would not consent to a wage above $3.20 for inside skilled labor and NRA agents would not accept a lower rate than $3.40. The latter rate was finally prescribed by the Administrator shortly before Schedule "A" was finally approved by the President. The outside rate was set at $2.40. These rates applied to District J including Alabama, Georgia and two counties of Southern Tennessee. For the other seven counties of Southern Tennessee, District J-1 was constituted. This area served as a buffer district and in that capacity had rates midway between District J and District C. Inside rates were set at $3.84; outside at $2.84.

It will be noted that no comparative adjustment had been made for Western Kentucky's nearest competitor in Southern Indiana. This area covered the Counties of Warrick and Vanderburgh. Mines in Southern Iowa occupying a similar position between Missouri with its $3.75 basic rate and Iowa with $4.70 were somewhat more fortunate. As a result of the repeated conference held in September between NRA officials and representatives of operators and miners, they were granted a 14 cent per day differential below Iowa's rates. It will be remembered that at the Code hearing this district had advanced claims to a $1.10 differential under the Iowa rate. This claim they based on rates once recognized in union contracts. Nevertheless a spokesman for the district at the hearing on Amendment No. 1 referred to the 14 cents as a "fairly decent differential". (*)

(*) Hearing, March 28, p. 282.

All the other claimants for special consideration who appeared at the Code hearing: Georges Creek, Maryland; Preston County, West Virginia; Somerset County, Pennsylvania; and the various Illinois groups shared the fate of Marrick and Vanderburgh Counties and were refused concessions under basic wage rates. However, it should be stated here that after the public hearing they were given patient consideration in private conferences. (*) Thus on September 21, 1933, a conference was held with Somerset County representatives at which they protested against the rate of $4.60. NRA officials stated that prices might be raised to offset the new wage rates. Thereafter the operators appealed direct to President Roosevelt. He referred the matter back to NRA officials who decided that the rate should stand. It should be noted that while Preston County did not receive special concessions they shared in the wage differential granted Northern West Virginia. Three counties of Western Pennsylvania - Mercer, Beaver and Lawrence, put in a plea for a 40 cent differential in day wages. Their representatives argued that such a differential had been customary and that their tonnage rates were high due to operating in thin veins. They were refused on the ground that this claim was similar to those of Somerset and Preston Counties previously denied and because it was "necessary to have a consistent policy".

Conferences regarding the wage rate adjustment between Division IV and V were particularly interesting because of the light thrown on the far reaching effect of wage differentials. It was agreed that the low wage rates in Western Kentucky and resultant competitive prices had forced wage reductions in the Southwest and these had reacted, in turn, on Southern Colorado and New Mexico. There was further the question of the relationship of wage rates in Northern Colorado. Southwestern operators stood firmly for the current rates because of the pressure of the substitute fuel-oil and gas. Since these wages were written into contracts, their position was a strong one. Under these conditions NRA officials decided that contract rates would have to stand. Southern Colorado-New Mexico rates were accordingly adjusted between those of other Districts in Division V and the exceptional wage rates of the Southwest.

Two other features of the Code wage structure deserve mention here. The thorny questions of tonnage rates and their adjustment to day wage rates were not settled beyond the Code provision that "other classifications of employment will maintain their customary differentials above or below said basic minimum rates and that payments for work performed on a tonnage or other piece work basis will maintain their customary relationship to the payments on a time basis provided in said

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(*) Memos. of Conferences in N.R.A. files.

basic minimum rates". Again the entire wage settlement was of a temporary nature. The Code provided for a conference on January 5, 1934 "for the purpose of determining what, if any, revisions may be desirable at that time of the wages, hours and differentials". Even though not revised as a result of this conference, the hours of work, minimum rates of pay and wage differentials were to continue in effect only to April 1, 1934. This defining of a three to six months period for the wage settlements was an essential part of the strategy adopted to secure compromise settlements. It was expected that cost and wage reports collected and compiled by N.R.A. would furnish a sound basis for later conferences. Interested groups, both of miners and operators, had well laid plans to modify the wage and hour situation.

A quotation from the report of the technical staff will be enlightening at this point:

> "When it comes to the problem of settling differentials for the south, the staff frankly admits that the data essential for formulating reliable opinion are not available. The Administrator should be informed that although the Illinois General Code recommended a 5 per cent differential between the North and South areas and the North and South Code recommended 5 cents per hour between the Ohio and Pennsylvanian fields on the one hand, and the Smokeless Appalachian Fields on the other, and 3 cents an hour between Northern West Virginia and Ohio--Pennsylvania, neither of the proponents of these Codes submitted substantiating data of a character which would help the Administration in arriving at an informed judgment. Any discussion of the North-South differentials must take cognizance of the fact that as the result of a combination of freight and wage differentials plus such factors as better quality of coal, shifts in market preferences, differences in natural conditions of mining such as height of seams, roof conditions, timber requirements and differences in overhead costs such as taxes, depletion and insurance, large coal fields have been developed, railroads have been built and extended, large industries have been located at points with a convenient source of supply available from several districts and whole communities have been brought into existence. Any change of differentials is, therefore, a life and death matter to the operators and miners and communities in the fields of both the north and south." (*)

Between the effective date of the Code and that of its first amendment, two noteworthy modifications of the wage differentials situation were made. The first of these applied to the Warrick - Vanderburgh problem; the second to certain hand operated mines in Saline County, Illinois. Special interest attaches to these adjustments. In each case Division II's Bituminous Coal Labor Board intervened but the policy pursued in the two Codes was diametrically opposed. As mentioned above, the approved Code in Schedule A made no mention of Warrick and Vanderburgh Counties. In consequence mines situated there came automatically under the Indiana rates of $4.57½ and $4.20. However, the Southern Coal Operators Association had a temporary contract at lower rates with the

(*) Letter from Technical Staff of Code Section to James H. Pierce, August 17, 1933.

United Mine Workers which expired December 17th, 1934. The Coal Trade Association of Indiana was consistently in favor of the differential proposed at the time of the Code Hearing for those two southern counties. Immediately on the publication of Schedule A, the managing director of that Association wired the Recovery Administration strongly supporting the wage adjustment and pledging the support of this Association to a committee which was to interview these officials the next day. (*)

The Administrator of the Coal Code referred the matter to the Divisional Labor Board and the case came up for hearing December 7, 1933. The Board ruled unanimously in favor of the contentions of the Warrick and Vanderburgh operators. They found that the mining conditions of these counties and of Western Kentucky were practically identical; that freight differentials ran against Southern Indiana to the extent of from 10 to 26 cents on shipment to Indianapolis and from 25 to 40 cents to the Chicago market; and that the principal reliance had been, and must continue to be, on markets to the northward. It is noteworthy that the Board reported that "hand loading was universally prevalent". There is further significance for its bearing on the difficulties inherent in assessing actual wage differentials from day wage rates in the following quotation from the Board's decision:

> "The wage rate fixed in the Code for Western Kentucky, just across the river from the Indiana counties, is $4.00 for inside labor and $3.00 for outside labor. There is a further differential in favor of Western Kentucky which does not appear in the schedule of rates in the Code. The minimum inside day wage rate as applied to west Kentucky as against the $4.57½ rate for Indiana creates a differential in the labor cost in favor of west Kentucky as against southern Indiana, by virtue of Article 4 of the Code under Minimum Rates of Pay, which reads: 'The basic minimum rate for inside skilled labor and the basic minimum rate for outside common labor shall be the rate hereinafter set forth in Schedule A for each district therein described for each such classification of labor with the understanding that other classifications of employment will maintain their customary differentials above or below said minimum rates . . .' The basic minimum rates set out for Indiana as $4.57½ actually represents the minimum for inside day labor, while in West Kentucky, because of their customary differentials, the $4.00 inside day wage rate does not apply to all of the employees, their customary differentials being below the minimum set forth in Schedule A, namely, $3.76, and since the rate set forth in Schedule A for top labor provides for the payment of $4.20 in Indiana as against $3.00 in West Kentucky, represents a 40 per cent differential in outside labor in favor of West Kentucky."

(*) Decision Divisional Board No. II, December 18, p. 5.

Although the Board was fully in sympathy with the request of the Southern Indiana operators it declared that "a change in the rate can be made only by an Executive Order of the President amending the Code." Accordingly the decision rendered December 18, 1933 went no further than to recommend "that action be taken at once by the Administrator to assure the operators of Vanderburgh and Warrick Counties that the differential suggested be granted and that it will be retroactive to the 17th of December, 1933". This assurance would allow continuous operation of the mines under the terms of the temporary joint wage agreement. Such an order was issued by Administrator Johnson under date of December 22, 1933. It set minimum inside day rates of $4.20 per day; outside of $3.60 per day. This concession did not affect day rates in strip mines which continued on the Indiana basic rates. This meant the creation of a new type of differential - deep vs. strip mines - and furnished a precedent followed later in Division IV by Amendment No. 3. The newly created rates were to be in effect only "pending completion of investigations now in process by N.R.A. as to wages, hours and working conditions in the bituminous coal industry". (*)

The second modification of Code wage rates grew out of the case of mines in Sahara County, Illinois. This again was a reopening of an appeal not granted when the Code was formulated and Schedule "A" promulgated. It should be remembered that it was heard before the same Board which decided the Warrick - Vanderburgh case. The mines interested had a contract effective preceding the Code and not terminating until April 1, 1935. This agreement granted to the operators a wage concession of 10 per cent, reducing the basic day wage from $5.00 to $4.50 in return for a promise to operate their mines entirely by hand labor. It was agreed that these provisions had resulted in extending the markets with a consequent extension of operating time. The miners there had greatery monthly earnings despite the lower wage scale.

No action was taken to validate this contract before the Code was approved. On October 10, 1933, the operators filed a petition asking for an exception from Code rates to the extent that the terms of their contract differed from those of the State of Illinois. This petition was automatically referred to the Coal Labor Board. It came up for hearing December 29, 1933. Prior to that date, General Counsel Richberg in response to a question from the Chairman of the Labor Board, transmitted through the Presidential Member of Division II Code Authority, had ruled on the question whether Code rates superseded those incorporated in a valid contract. His positive statement, dated December 21, 1933, read:

> "The Bituminous Coal Code is binding on the employees in the industry and a contract to pay $4.50 a day furnishes no excuse to an employer

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(*) Quoted in Hearing, March 31, 1934 p. 433-4

> for not paying $5.00 a day. As a matter of law, individuals by contracting cannot prevent the exercise of governmental authority as, for example, in the regulation of interstate commerce, so that in the case of conflict the regulations of the Coal Code necessarily control." (*)

Notwithstanding this positive ruling and in contravention of their own decision of less than a month earlier, the Board on January 13th, 1934, unanimously "concluded that the contracts should be upheld and by virture of its authority so ordered for a preliminary period of six months".

Under these conditions it was not surprising that the Board was at pains to support its decision. "This contract", reads the decision, "is not oppressive. It is deemed on all sides to be a good contract." * * "The compensation is above that which is fixed as the minimum of decency and comfort. Moreover it is a matter of common knowledge that more days of work in a year are provided under this contract than would be if the $5.00 rate were exacted." After quoting legal precedents as to the sanctity of legal contracts, the Board found that from the standpoint of fair competition conditions required by the Bituminous Coal Code, the 10 per cent differential was justified. "The thickness of the vein of coal", said they, "and the draw slate condition of these mines deprive the operators of any advantage, even with the wage reduction, over the mines of neighboring counties". The United Mine Workers not content with this concession to their rivals, the Progressive Miners, appealed the case to the National Bituminous Coal Labor Board. Before this Board reached consideration of the matter, however, the United Mine Workers withdrew their appeal and the case was dismissed as closed.

The story of Amendments Nos. 1, 2 and 3 has been told above. At this point nothing further will be attempted than to state the net effect on the wage differential situation of these modifications. The successive changes in wage rates may be followed in Table II appended. Division II was the greatest gainer. Its own day rates were unchanged aside from a minor change in Wayne and Appanoose which eliminated the 14 cent day wage differential for outside day workers. On the other hand the day rates of its nearest competitors in Division I were increased 40 cents per day. Western Kentucky was to be increased 60 cents per day on inside skilled labor and 75 cents on outside common labor while Northern West Virginia had increases of 64 cents in both classes of labor. Thus Districts A and B after the Amendments had day rates equal to those of Illinois and in the case of inside day labor appreciably above those of Indiana and Iowa. Indiana's outside rate was 20 cents higher while Iowa's was the same.

(*) Letters in N.R.A. files.

In Division V day wages were changed in only a few districts. In Northern Colorado the inside day rates were raised 25 cents to $5.25 and outside rates 50 cents to $4.25. This was of nominal importance since for the most part this meant nothing more than writing into the Code the rates actually paid. Changes in Southern Colorado and New Mexico were of greater importance. The increase itself was of significant amount, from $4.44 and $4.48 inside to $5.00 and from $3.75 outside to $4.10. It will be noted that these raises are materially higher than those nominally given to the competing district to the north. In most cases the increases were a net reduction of the effective wage cost differential since Northern Colorado mines had previously paid these new Code minima. In the matter of the Southwest competition the net result of the Amendments was to further handicap Southern Colorado and New Mexico. In the original Schedule A these States had a 73 cent inside wage differential above states in the Southwest and 47 cents in outside labor. After Amendment No. 3 became effective the differentials between deep mine rates were $1.10 and 57 cents; in strip mines 75 and 35 cents. The net result so far as day wage rates were concerned was an increase in the relative wage cost burden imposed on Southern Colorado and New Mexic. For the balance of Division V the relative wage situati n was unchanged. The 50 cent increase in both inside and outside day labor in the Dakotas had little practical significance since there was little compliance with Code rates. (*)

In the final outcome the day wage differentials between Southern Tennessee and Southern Appalachian field remained unchanged at 36 cents per day. Alabama and Georgia had 80 cents below Southern Appalachian the same differential written into the original Code. The Southwest gained at the expense of Alabama since the regional differentials in favor of Alabama had been 35 cents on inside rates and 88 cents on outside rates. The new adjustment allowed only 30 and 73 cents on deep mined coal The wage differentials between Illinois and the Southwest had been considerably narrowed. The interdistrict hourly wage rate situation is presented in detail in Table III

The effect of piece rate changes remains obscure. A flat general advance was provided in Amendment No. 1 of 10 cents per ton for pick mining, 8 cents for machine mining, 1 cent for cutting and 9 per cent on yardage and deadwork. This of itself disturbed the existing wage adjustment since it applied indifferently to districts in which day rates had been advanced and to those in which the original Code day wages were maintained. The states in Division II and most districts in Division V should show an increase in tonnage costs as compared to day wage costs. This is on the assumption that tonnage produced did not decrease in proportion to the one-eighth cut in hours of operation to which the unchanged day rates applied. In any case, there can be no doubt that districts in which both day rates and tonnage rates were increased would show increased labor costs of production by comparison with interests in which but one category of wage rates was increased.

(*) Transcript of Hearing before Division V Labor Board, June 8, 9 and 11, 1934, Bismarck, North Dakota.

Another complication entered at this stage of Code wage history to further confuse the problem of correctly comparing the interdistrict wage differential situation. The general tonnage rate increase has just been stated. There was a further clause, applying to District B, Northern West Virginia; District G, the Southwest; District K, Western Kentucky; and Districts J and J-1, which made up Division III. This called for an additional increase in piecework rates "by an amount sufficient to maintain the parity" between the new day rates and these tonnage rates. In the outcome, as noted above, Western Kentucky successfully evaded all changes in piece rates, and submitted to only so much increase in day rates as resulted from applying the old day rates to the shortened hours. Northern West Virginia compounded the requirements by granting an additional increase of 2½ cents in loading rates and ½ cent in cutting rates. Pick-mining rates and yardage and deadwork got no more than the 10 cents and 9 percent called for in Amendment 1. Consideration of the fact that day rates in this district has been jumped 64 cents a day or over 14 percent will indicate that this was by no means a countervailing advance sufficient to maintain the old parity with day rates. Spokesmen for Northern West Virginia maintained that the rates as adjusted made the earnings of their tonnage workers equivalent to those of similar workers in competing districts.(*) In the Southwest in the final adjustment of day rates, which it will be remembered gave much less of an increase to deep miners than the normal 40 cents per day, a concession was made below the standard increases in tonnage rates. The pickmining increase was but 8 cents per ton; the combined machine cutting and loading rate increase was 7 cents and the yardage and deadwork advance was the standard 9 percent.(**)

Study of union wage contract rates found in agreements by the Bituminous Coal Code Section in Research and Planning reveals that in several other cases the advances called for by the Code were not, in fact, received. Fields in the Smokeless region generally received but 9 cents increase in the pickmining rate, as shown by the following insert:

(*) Protest and Brief ut supra, pp. 66 et seq.

(**) See Chapter II.

	PICKMINING			LOADING AFTER MACHINE		
	Oct. 2 1933	Apr. 1 1934	Inc. Cents	Oct. 2 1933	Apr. 1 1934	Inc. Cents
New River	.517	.607	+.09			
Winding Gulf	.454	.544	+.09			
Greenbrier	.447	.537	+.09			
Pocahontas & Tug River	.357	.437	+.08			
Kanawha	.492	.582	+.09			
Logan	.384	.474	+.09			
Williamson	.414	.504	+.09			
Big Sandy (Under 48 inches)	.545	.635	+.09			
Hazard	.483	.572	+.09			
Harlan (36 to 44 Inches)	.480	.570	+.09			
Sou. Appalachian (36 to 48 inches)	.530	.610	+.08			
Iowa, Wayne and Appanoose a/	1.300	1.410	+.110	.82	.91	+.09
Arkansas	.72	.80	+.08	.58	.64½	+.06½
Oklahoma	.72	.80	+.08	.58	.64½	+.06½
Mo. - Ray & Clay	1.21	1.29	+.08	.72 3/5	.78 3/5	+.06
Kans.-Crawford & Cherokee and Barton Co., Mo	.80	.88	+.08	.55	.61	+.06

a/ Screened lump or hand picked basis.

The important areas of Pocahontas, Tug River and Southern Appalachian were given but 8 cents. These adjustments seem to have been made by private negotiation and entirely without reference to N.R.A. authority. Beyond the statement that they were granted in return for concessions on yardage and deadwork payments, these adjustments have not been explained.

It remains to discuss three wage differential controversies which persistently demanded the attention of N.R.A. officials. The first of

these arose between Divisions IV and V. The complaint of Division V was based on a provision in Amendment No. 3 which read:

> "In view of the differentials accorded the Southwest there shall be no sales by operators of said District into the normal consuming markets of another District which is subject to higher rates of pay at any price for coal of comparable grade and quality, less than the price for such coal in said market charged by such other District, and there shall be no destructive invasion of such other consuming markets, and, in the absence of satisfactory agreements governing the matter, the determination of the Administrator on complaint of any such destructive invasion shall be conclusive."

Division V made formal complaint alleging that Nebraska, Kansas, South Dakota and Northern Texas were normal consuming markets of Wyoming, Colorado and New Mexico coals; that Southwestern coals were as good as the best western coals and much better than the average of those coals; and citing production data and the records of railway shipments to prove that the operators of Division V had suffered from the competition of Division IV. Conferences were held at Kansas City in June, 1934; at Colorado Springs on August 13 and 14th; and a formal hearing assembled at Chicago on September 10, 1934. At that time the case of Division V was fully presented. Spokesmen for that section manifested a desire to arrange a compromise. Division IV, on the contrary, brought forward scant statistical or other data while enlarging on their difficulties due to competing fuels. They acknowledged that their prices had been reduced but declined to discuss division of competitive territory or adjustment of prices. The only suggestion they proffered was that Division V's wage standards and prices might be reduced to compare with those in Division IV. The ruling of Division Administration Ellis, dated October 3rd, sustained the contention of Division V, and ordered Division IV to desist from invading the normal markets of the complaining states. Little compliance was given to the order. On March 13, 1935 the Chairman of Division V complained to N.R.A. that Division IV "had made no attempt to comply". Letters originating in Division IV of somewhat later date state that the Code Authority of Division IV had "successfully ignored" the order to date. At that time the Code Authority was engaged in collecting opinions to the effect that observance of the order would severely damage operators in their district.(*)

The second controversy was the Northern West Virginia case discussed at some length above, where it has been carried through the Code and Code amendment stages. The compromises, then made, so far as Northern West Virginia was concerned were accepted only as tempo-

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(*) Transcript of hearing and correspondence, N.R.A. files.

rary expedients. They were sacrifices made necessary by the desire to retain the benefits of Code control. There is abundant evidence to demonstrate that the rates were sincerely felt to bear inequitably on the district. Their acceptance, pending study of additional data, was a lesser evil than a return to unrestricted competition.

The elaborate printed Protest and Brief, a document of about 100 pages with supporting statistical tables, charts and maps, summed up the position of operators in Northern West Virginia. It was jointly submitted by the Northern West Virginia Subdivisional Coal Association and the Subdivisional Code Authority, under date of October 3, 1934. In brief summary, the argument contended that the original Code minima had fairly extended a wage adjustment of long standing. The doctrine of vested interests was given effective statement. "The operators", reads the brief, "have acted on the faith of the correctness of those wage differentials in their business relation, in acquiring and developing their properties and in making their contracts." It was alleged that the amended rates had seriously disturbed the parity of pay for tonnage and piece workers, had increased the costs of production for Northern West Virginia by a greater percent than had been true for competing districts, and had caused their district a loss in tonnage produced without sufficient "spread" between costs and realization to permit price reductions.

A showing was made that Northern West Virginia due to the fact that but 4 percent of production was consumed in the district, was under necessity of shipping coal unusually long distances and was at a serious disadvantage because of discriminating freight rates. This handicap had been, and should continue to be, balanced by a lower production cost. Coal seams in the district were thick. The coal was clean, roof and drainage conditions good, and draw slate infrequently encountered.(*) Hence the lower tonnage rates per ton gave equivalent or greater earning opportunity to the miners than the higher per ton rates in other fields. Some of these in Ohio and Western Pennsylvania required the handling by the miners of up to 12 inches of draw slate without extra compensation.(**) The protestants appealed to the records both of N.R.A. and of the Bureau of Mines to prove that under Code wages, this district had not expanded production to the detriment of competing areas. In closing, the brief states:

> "Even handed justice demands that no alteration of wage differentials of long standing in any mining district should be made without justifiable data therefor assembled by an impartial tribunal covering a sufficient period of time

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(*) See Transcript of Hearing, April 10, 1934, Testimony of Mr. J. Noble Snider, p. 308.

(**) See Brief, Section IX, pp. 70 et seq.

to be dependable." (*)

Such an impartial tribunal was invoked to settle this and the third leading wage differential case - that concerning the Smokeless field. This controversy was coterminous with Code history. It took definite shape in the conferences which preceded Code formulation. Smokless operators were clear in their recollection that both General Johnson and John L. Lewis had promised that the wage rates for their district written into "Schedule A" should be continued only as long as was necessary to show the relative wage costs imposed by Code rates on them and on their northern competitors. This commitment was acknowledged by Messrs. Johnson and Lewis. (**) But it was further stated that the promised adjustment was conditioned upon "proved injustice". Data for such proof was not then available.

A connected story can be pieced together from the opposing arguments. Difficulties were encountered at the first Appalachian joint wage conference in reaching agreement on the relative tonnage rates for loaders of Central and Western Pennsylvania and of the Smokeless field. Appeal was made to General Johnson as arbiter. It was claimed for the northern fields that loaders averaged 10 tons per day as compared to 11 tons in the south. On this basis and considering the new loading rate for the North to represent an increase of 10 cents per ton, General Johnson prescribed a 9.2 cents increase for the Smokeless field. Representatives of that district disagreed both with the statement of average tons loaded in the North and with the statement that the new loading rate amounted to a 10 cents per ton increase. They accepted the new rate under protest as a temporary settlement. It was to hold only until data was available for an exact statistical determination.

When under Amendment No. 1 it was proposed to apply a further increase of 8 cents per ton to the loading rate in North and South alike, the Southern spokesmen voiced an indignant protest. They presented evidence to show that the average loading rate per man per day in Northern fields was 7 tons instead of 10 as claimed when the first Appalachian Agreement was signed. The Smokeless field had an average loading rate per man per day of 11 tons. Thus the northern miner loading coal earned $4.29 in Central Pennsylvania; $4.42 in Western Pennsylvania; and but $4.00 in Ohio. In all these Subdivisions, earnings of loaders should have equalled $4.60 per day to maintain the desired parity with inside day men's wages. In the Smokeless area, on the contrary, earnings of loaders had been $4.74 although the requirement of parity with day wages called for but $4.20.(***)

(*) See Section XII.

(**) Letter in Transcript of Hearing, April 9, 1934, p. 249.

(***) Brief of W. A. Richards for Code Authority of Southern Subdivision 7, presented April 9, 1934, p. 3, N.R.A. files.

This failure to maintain equity between the Subdivisions and parity between day and tonnage earnings, the southern spokesman argued would be emphasized by the flat increase of 8 cents per ton proposed by Amendment No. 1. This 8 cents applied to the Northern loader's average day's output of 7 tons made 56 cents increase per day. Since the loaders in the Smokeless fields' output was 11 tons, it meant a gain to him of 88 cents per day. Thus the loaders differential in the two areas would be increased by 32 cents a day. Since the inside day man's wage in the Smokeless field had been increased but 40 cents, this 88 cent increase in the loader's daily earnings would further extend the failure of the Code to attain parity between inside day wages and loader's tonnage earnings. (*) The earnings and employment data of N.R.A. support this presentation. There is less support for the biting conclusion of the brief quoted which reads: "We can only conclude that the Amendment was drawn as it was to secure the private advantage of certain of the districts which participated in drawing it."

The explanation quoted for this disparity in daily tonnage loaded and in consequent earnings was the difference in the organization of inside labor in the two fields. N.R.A. reports taken for the November 1 to 15th payroll period in 1934 showed the following situation as to the relative percentages of day and tonnage men in the districts concerned:

	Tonnage Men Per Cent	Day Men Percent
Western Pennsylvania	70.3	29.7
Central Pennsylvania	74.5	25.5
Ohio	74.1	25.9
Northern West Virginia	67.2	32.5
Southern Subdivision No. 1 (Smokeless)	56.2	43.8
Southern Subdivision No. 2	61.3	38.7

These data show that the contention of the spokesmen of the Smokeless field were well based albeit in the open hearing somewhat exaggerated. The 43.8 percent of day men in their field much exceeded that of any of the Northern fields and was approached only by the other southern field. Under this organization, it was the contention of the Smokeless representatives that lower tonnage rates for loaders were fully justified by the lesser demands made on the miners. Day men timbered their working places, cleaned up falls, laid track, placed empty cars at the face of their rooms and removed the cars when loaded. In addition loaders were paid additional compensation for handling draw slate. In some of the Northern fields draw slate up to 12 inches in thickness was handled by loaders without additional compensation.

(*) Brief ut supra, p. 4.

These claims had support, at the time, from the Director of N.R.A. Research and Planning in the following terms:

> "The Smokeless operators' petition for establishment of parity between earnings of tonnage men and day men raises the same issues as those in the Northern West Virginia Case.
>
> "The Smokeless operator's reports to the N.R.A. indicate an unusual differential of the earnings of piece workers above the earnings of day men. This spread will be further widened, perhaps in absolute amount and certainly relative to the spread in other fields, by the general flat increases in tonnage rates specified in the Amendment.
>
> "On the basis of parity between earnings of tonnage men and day men, or on the basis of maintenance of approximately the same spreads between such earnings in the various fields, the Smokeless operators can support their claim for an adjustment in tonnage rates. The Amendments places them at a disadvantage relative to Eastern Pennsylvania because it involves the same increases in piece work costs per ton but larger increases in day labor costs per ton than in Eastern Pennsylvania. This is due to the relatively larger number of day men and to the specialization of the loaders' duties in the Smokeless field."(*)

Despite this weighty support and the earnest and capable presentation made in behalf of the contention of the Smokeless operators, no amendment of the loading rates was secured. Instead the problem was turned over to the North-South Commission provided for in the second Appalachian Agreement. This body was to be made up of 4 northern operators with 4 miner representatives; one each from the fields of Western Pennsylvania, Eastern Pennsylvania, Ohio, and Northern West Virginia; and a similar number of operators and miners "fully representative of the Southern fields". (**) The assignment of this Commission covered only the Smokeless and the Northern West Virginia controversies. The plans of N.R.A., however, much exceeded these limits. It was intended to make a comprehensive study of all wage differential questions. To this end a special official was engaged in July, 1934, and plans laid for the gathering of all needed data on wages, earnings and employment. The North-South Commission

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(*) Report of Leon Henderson, April 19, 1934.

(**) Wage Agreements, 1934, p. 31.

met in June and July and worked out plans to furnish data. After various delays the group met again in September when insoluble questions arose regarding the handling of reports on the time worked by tonnage men. For these workers no time record is ordinarily kept and attempts to define man-starts in a way acceptable to everybody concerned did not succeed. In consequence, the projected study was abandoned in in December, 1934, (*) This result can only be regarded as a major statistical disaster since it defeated all plans for a substantial investigation of the wage differential situation. In the hope of salvaging something from the wreck, a letter from the Smokeless representative, together with his suggestions to guide the investigators, is appended to this chapter. The essence of his statement was bound up in the sentence "The present rates are based on unlike things and unlike amounts of labor required and work performed."

Persistent study of wage differential problems will deepen appreciation of this wise observation. Many of the most heated controversies have persisted, at least since 1920, as a reading of the records of the United States Bituminous Coal Commission discloses. No discernible advance has been made toward their settlement. They are chronic, deep seated maladjustments calling for radical surgical treatment. Superficial observors are tempted to conclude that the wage differential situation is merely irrational, inexplicable and a logical field for the exercise of the talents of "braintrusters" and economic planners. At bottom most wage differentials have two chief reasons for being. They result from severe economic pressures or they are historical survivals from unregulated non-union conditions. Given coal seams in backward districts with a population living on low economic levels, the tendency is for coal mines, like all other industries, to build up a wage system adapted to the current standard of living. Thereafter the decrease in production costs resulting from full and continuous production induces the operator to push his sales and shipments to the most remote markets he can reach. This results in establishing an equilibrium between costs and realization at his low wage standards. When the union enters this situation it can only gain recognition by accepting the current wages. When N.R.A. promulgated Amendment No. 1, submarginal districts as the Southwest, Division II and Western Kentucky, not to mention areas of lesser importance, alleged with conviction and truth that such wage advances would necessitate the closing of mines. It should be emphasized in this connection that this state of affairs is not always associated with a low wage level. Too little attention is paid to the favorable differential maintained in Division V. Here, too, production is keyed to the output possible at current labor costs. But a scant labor supply joined to a high standard of living established wages at a relatively high level.

(*) Final Report of Willard E. Hotchkiss to the Director of Research and Planning, December 15, 1934.

The National Recovery Administration owed its existence to the great depression. In consequence it operated in parlous times. All its actions and judgments were conditioned by a desire to increase employment. However, it may well be doubted whether its efforts to erase wage differentials would have been more successful in normal times. When faced with the dilemna that maintenance of wage standards means destruction, or even serious hampering of industry, governmental regulation has pretty regularly abandoned the wage standard. And it may be added has been aided and abetted by labor in so doing. Thus the history of development under successive Amendments Nos. 1, 2 and 3 was perfectly normal and could have been precisely predicted by any student of affairs blessed with a good memory and a modicum of insight.

In wage questions there is always an insufficiency of data. But in the case of wage differentials this handicap transcends the lack of mere wage recording. The need is for exact knowledge of mine conditions and labor organization. It does not follow in the bituminous coal industry that men rated the same and given the same occupational designation, are doing the same or even equivalent work. Illustrations of this are given above. But they are incidental-better accidental - discoveries which suggest that adequate research would disclose a comprehensive lack of comparability, not only district by district, but in many cases, mine by mine.

This is eminently true in areas where the progress of mechanization is incomplete. Some thin seams with irregularly occurring impurities, cannot be economically mined with machines. The persistence of hand operations in an industry now passing through its industrial revolution gives rise to a situation not correctly to be included in wage differential discussion. What we have here is not a maladjusted wage situation but rather the familiar and futile struggle of artisans against the machine. In the beginning the industry established a machine differential. At present the industry is setting up preliminary handicaps. Some of these are openly arrived at as in the Saline County case; more are concealed in the general preliminary rate as related to machine operations. As the best available illustration of inter-district differences in conditions, a statement of relative payments for yardage and deadwork is appended to the chapter. The relative payments by divisions are shown in the following insert:

	Percent Yardage & Deadwork is of total Labor Cost
Division I	6.1
Division II	2.1
Division III	8.3

The extreme variation by districts is from 1.1 percent in Indiana to 15 percent in Michigan as shown in Table IV appended to this Chapter.

Chapter IV (C) Table 1

Differentials in Hourly Wage Rates Established by the Code as Amended April 1, 1934

Inside Skilled Labor

Code No.	District	Cents Per hour	Dist A	Dist B	Dist C	Dist D	Dist E	Dist F (Except Wayne and Appanoose Cos)	Dist F (Wayne and Appanoose Cos)	Dist G	Dist H	Dist J	Dist J-1	Dist K	Dist L	Dist M	Dist N	Dist O	Dist P	Dist Q
			Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents
A	Pa.-Ohio-Michigan-Panhandle	.714	-	-	-.057	-.059	-	-.043	-.063	-.143	-.057	-.172	-.110	↓.014	↓.036	↓.063	↓.061	↓.091	↓.057	-.071
B	Northern West Virginia	.714	-	-	-.057	-.059	-	-.043	-.063	-.143	-.057	-.172	-.110	↓.014	↓.036	↓.063	↓.061	↓.091	↓.057	-.071
C	S. West Va., E. Kentucky, Upper Potomac, Maryland, Virginia, No. Tennessee	.657	↓.057	↓.057	-	-.002	↓.057	↓.014	-.006	-.086	-	-.115	-.053	↓.071	↓.093	↓.120	↓.118	↓.148	↓.114	-.014
D	Indiana	.655	↓.059	↓.059	↓.002	-.-	↓.059	↓.016	-.004	-.084	↓.002	-.113	-.051	↓.073	↓.095	↓.122	↓.120	↓.150	↓.116	-.012
E	Illinois	.714	-	-	-.057	-.059	-	-.043	-.063	-.143	-.057	-.172	-.110	↓.014	↓.036	↓.063	↓.061	↓.091	↓.057	-.071
F	Iowa	.671	↓.043	↓.043	-.014	-.016	↓.043	-	-.020	-.100	-.014	-.129	-.067	↓.057	↓.079	↓.106	↓.104	↓.134	↓.100	-.028
F	Iowa-Wayne and Appanoose Cos.	.651	↓.063	↓.063	↓.006	↓.004	↓.063	↓.020	-	-.080	↓.006	-.109	-.047	↓.077	↓.099	↓.126	↓.124	↓.154	↓.120	-.008
G	Missouri-Kansas-Arkansas-Oklahoma	.571a/	↓.143	↓.143	↓.086	↓.084	↓.143	↓.100	↓.080	-	↓.086	-.029	↓.033	↓.157	↓.179	↓.206	↓.204	↓.234	↓.200	↓.072
H	Western Kentucky	.657	↓.057	↓.057	-	-.002	↓.057	↓.014	-.006	-.086	-	-.115	-.053	↓.071	↓.093	↓.120	↓.118	↓.148	↓.114	-.014
J	Alabama-Georgia-So.Tenn. Hamilton and Rhea Cos.	.542	↓.172	↓.172	↓.115	↓.113	↓.172	↓.129	↓.109	↓.029	↓.115	-	↓.062	↓.186	↓.208	↓.235	↓.233	↓.263	↓.229	↓.101
J-1	Southern Tennessee	.604	↓.110	↓.110	↓.053	↓.051	↓.110	↓.067	↓.047	-.033	↓.053	-.062	-	↓.124	↓.146	↓.173	↓.171	↓.201	↓.167	↓.039
K	Southern Colorado and New Mexico	.728	-.014	-.014	-.071	-.073	-.014	-.057	-.077	-.157	-.071	-.186	-.124	-	↓.022	↓.049	↓.047	↓.077	↓.043	-.085
L	Northern Colorado	.750	-.036	-.036	-.093	-.095	-.036	-.079	-.099	-.179	-.093	-.208	-.146	-.022	-	↓.027	↓.025	↓.055	↓.021	-.107
M	Utah	.777	-.063	-.063	-.120	-.122	-.063	-.106	-.126	-.206	-.120	-.235	-.173	-.049	-.027	-	-.002	↓.028	-.006	-.134
N	Northern and Southern Wyoming	.775	-.061	-.061	-.118	-.120	-.061	-.104	-.124	-.204	-.118	-.233	-.171	-.047	-.025	↓.002	-	↓.030	-.004	-.132
O	Montana	.805	-.091	-.091	-.148	-.150	-.091	-.134	-.154	-.234	-.148	-.263	-.201	-.077	-.055	-.028	-.030	-	-.034	-.162
P	Washington	.771	-.057	-.057	-.114	-.116	-.057	-.100	-.120	-.200	-.114	-.229	-.167	-.043	-.021	↓.006	↓.004	↓.034	-	-.128
Q	North and South Dakota	.643	↓.071	↓.071	↓.014	↓.012	↓.071	↓.028	↓.008	-.072	↓.014	-.101	-.039	↓.085	↓.107	↓.134	↓.132	↓.162	↓.128	-

Outside Common Labor

Code No.	District	Cents Per hour	Dist A	Dist B	Dist C	Dist D	Dist E	Dist F (Except Wayne and Appanoose Cos)	Dist G	Dist H	Dist J	Dist J-1	Dist K	Dist L	Dist M	Dist N S. Wyo	Dist N N. Wyo.	Dist O	Dist P	Dist Q
			Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents		Cents	Cents	Cents
A	Pa.-Ohio-Michigan-Panhandle	.571	-	-	-.057	↓.029	-	-	-.067	-.035	-.171	-.109	↓.015	↓.036	↓.069	↓.064	↓.078	↓.118	-	-.042
B	Northern West Virginia	.571	-	-	-.057	↓.029	-	-	-.067	-.035	-.171	-.109	↓.015	↓.036	↓.069	↓.064	↓.078	↓.118	-	-.042
C	S.West Va., E. Kentucky, Upper Potomac, Maryland, Virginia, No. Tennessee	.514	↓.057	↓.057	-	↓.086	↓.057	↓.057	-.010	↓.022	-.114	-.052	↓.072	↓.093	↓.126	↓.121	↓.135	↓.175	↓.057	↓.015
D	Indiana	.600	-.029	-.029	-.036	-	-.029	-.029	-.096	-.064	-.200	-.138	-.014	↓.007	↓.040	↓.035	↓.049	↓.089	-.029	-.071
E	Illinois	.571	-	-	-.057	↓.029	-	-	-.067	-.035	-.171	-.109	↓.015	↓.036	↓.069	↓.064	↓.078	↓.118	-	-.042
F	Iowa (Including Wayne and Appanoose Cos.)	.571	-	-	-.057	↓.029	-	-	-.067	-.035	-.171	-.109	↓.015	↓.036	↓.069	↓.064	↓.078	↓.118	-	-.042
G	Missouri-Kansas-Arkansas-Oklahoma	.504b/	↓.067	↓.067	↓.010	↓.096	↓.067	↓.067	-	↓.032	-.104	-.042	↓.082	↓.103	↓.136	↓.131	↓.145	↓.185	↓.067	↓.025
H	Western Kentucky	.536	↓.035	↓.035	-.022	↓.064	↓.035	-.035	-.032		-.136	-.074	↓.050	↓.071	↓.104	↓.099	↓.113	↓.153	↓.035	-.007
J	Alabama-Georgia-So. Tenn. (Hamilton and Rhea Cos.)	.400	↓.171	↓.171	↓.114	↓.200	↓.171	↓.171	↓.104	↓.136	-	↓.062	↓.186	↓.207	↓.240	↓.235	↓.249	↓.289	↓.171	↓.129
J-1	Southern Tennessee	.462	↓.109	↓.109	↓.052	↓.138	↓.109	↓.109	↓.042	↓.074	-.062	-	↓.124	↓.145	↓.178	↓.173	↓.187	↓.227	↓.109	↓.067
K	Southern Colorado & New Mexico	.586	-.015	-.015	-.072	↓.014	-.015	-.015	-.082	-.050	-.186	-.124	-	↓.021	↓.054	↓.049	↓.063	↓.103	-.015	-.057
L	Northern Colorado	.607	-.036	-.036	-.093	-.007	-.036	-.036	-.103	-.071	-.207	-.145	-.021	-	↓.033	↓.028	↓.042	↓.082	-.036	-.078
M	Utah	.640	-.069	-.069	-.126	-.040	-.069	-.069	-.136	-.104	-.240	-.178	-.054	-.033	-	-.005	↓.009	↓.049	-.069	-.111
N	Southern Wyoming	.635	-.064	-.064	-.121	-.035	-.064	-.064	-.131	-.099	-.235	-.173	-.049	-.028	↓.005	-	↓.014	↓.054	-.064	-.106
N	Northern Wyoming	.649	-.078	-.078	-.135	-.049	-.078	-.078	-.145	-.113	-.249	-.187	-.063	-.042	-.009	-.014	-	↓.040	-.078	-.120
O	Montana	.689	-.118	-.118	-.175	-.089	-.118	-.118	-.185	-.153	-.289	-.227	-.103	-.082	-.049	-.054	-.040	-	-.118	-.160
P	Washington	.571	-	-	-.057	↓.029	-	-	-.067	-.035	-.171	-.109	↓.015	↓.036	↓.069	↓.064	↓.078	↓.118	-	-.042
Q	North and South Dakota	.529	↓.042	↓.042	-.015	↓.071	↓.042	↓.042	-.025	↓.007	-.129	-.067	↓.057	↓.078	↓.111	↓.106	↓.120	↓.160	↓.042	-

a/ This rate is for deep mines, effective June 11, 1934 (Amendment No. 3) Rate for strip mines was $0.621
b/ This rate is for deep mines, effective June 11, 1934 (Amendment No. 3) Rate for strip mines was $0.536

Chapter IV C Table II

BASIC MINIMUM RATES OF PAY ESTABLISHED UNDER THE CODE AS AMENDED BY AMENDMENTS Nos. 1, 2 and 3

District	Effective October 2, 1933 (Original Code)				Effective April 1, 1934 (Amendment No. 1)				Effective April 1, 1934 (Amendment No. 2)				Effective June 11, 1934 (Amendment No. 3)			
	Minimum inside skilled labor		Minimum outside common labor		Minimum inside (Skilled Labor)		Minimum outside (Common Labor)		Minimum inside skilled labor		Minimum outside common labor		Minimum inside, skilled labor		Minimum outside, common labor	
	Dollars per day	Cents per hour	Dollars per day	Cents per hour	Per day	Per hour	Per day	Per hour	Per day	Per hour	Per day	Per hour	Per day	Per hour	Per day	Per hour
DISTRICT A																
Pennsylvania	4.00	57½	3.60	36	$6.00	$0.71½	$4.00	$0.57½								
Ohio	4.00	57½	3.60	46	6.00	.71½	4.00	57½								
Lower Peninsula of Michigan	4.00	57½	3.60	45	5.00	.71½	4.00	57½								
Panhandle District of West Virginia [1]	3.60	57½	3.60	46	5.00	.71½	4.00	57½								
DISTRICT B																
Northern West Virginia [2]	3.86	66½	3.86	63	5.00	.71½	4.00	57½								
DISTRICT C																
Southern West Virginia [3]	4.20	62½	3.20	48	4.60	.65½	3.60	.51½								
Eastern Kentucky [4]	4.20	62½	3.20	60	4.60	.65½	3.60	.51½								
Upper Potomac District of West Virginia [5]	4.20	62½	3.20	46	4.60	.65½	3.60	.51½								
Maryland	4.20	62½	3.20	60	4.60	.65½	3.60	.51½								
Virginia	4.20	62½	3.20	60	4.60	.65½	3.60	.51½								
Northern Tennessee [6]	4.20	62½	3.20	58	4.60	.65½	3.60	.51½								
DISTRICT D																
Indiana	4.87½	62½	3.80	63¾	4.87½	68¾	4.80	60								
DISTRICT E																
Illinois	5.00	63½	4.00	60	5.00	.71½	4.00	57½								
DISTRICT F																
Iowa [7]	4.80	60¾	4.00	60	4.70	67½	4.00	57½								
Wayne and Appanoose Counties of Iowa	4.66	57	3.80	48¾	4.66	58½	4.00	57½								
DISTRICT G																
Missouri, Kansas, Arkansas, and Oklahoma	3.76	46¾	3.28	41	[2]	[2]	[2]	[2]	4.36	.62½	2.75	39½	4.36	0.62½	3.78	0.53½
													4.00	57½	3.52	.50½
DISTRICT H																
Western Kentucky [8]	4.00	60	3.00	37½	4.80	.68¾	3.76	53½								
DISTRICT I																
Alabama	3.60	43½	2.40	30	[2]	[2]	[2]	[2]	3.60	.54½	2.60	35				
Georgia	3.60	43½	2.40	30	[2]	[2]	[2]	[2]	3.60	.54½	2.60	35				
Hamilton and Rhea Counties of Tennessee	3.60	43½	2.40	30	[2]	[2]	[2]	[2]	3.60	.54½	2.60	35				
District I-Y																
Marion, Grundy, Sequatchie, White, Van Buren, Warren, and Bledsoe Counties of Tennessee	3.64	46	2.64	33¾	[2]	[2]	[2]	[2]	4.24	60½	2.76	.46½				
DISTRICT K																
New Mexico	4.65	66	3.75	46¾	5.10	.72½	4.10½	58½								
Southern Colorado [9]	4.64	65½	3.75	46¾	5.10	.72½	4.10½	58½								
DISTRICT L																
Northern Colorado [10]	3.00	40½	2.76	46¾	5.25	75	4.25	60½								
DISTRICT M																
Utah	5.44	63	4.48	56	5.44	77½	4.48	.64								
DISTRICT N																
Southern Wyoming	5.42	77¼	4.44	55½	15.42	10 77.10	84.44	10 63½								
Northern Wyoming	5.42	67¼	4.54	56¾	5.42	77.10	4.54	64½								
DISTRICT O																
Montana	5.53	70½	4.52	50¼	5.62	80½	4.62	66½								
DISTRICT P																
Washington	5.40	67½	4.00	50	5.40	77½	4.00	.57½								
DISTRICT Q																
North Dakota	4.00	50	3.20	40	4.50	64½	3.70	52½								
North Dakota (strip mining, pit labor)					4.50	64½	Tipple Employees 3.70	52½								
South Dakota	4.00	50	3.20	40	4.60	64½	3.70	.52½								

[1] Includes Hancock, Brooke, Ohio, and Marshall Counties.
[2] Includes Monongalia, Preston, Marion, Harrison, Taylor, Lewis, Barbour, Gilmer, Upshur, Randolph, Braxton and Webster Counties and those mines in Nicholas County served by the B & O. R R
[3] Includes all mines in counties of West Virginia not named under districts A and B and under the Upper Potomac District
[4] Includes all mines in Kentucky located east of a north and south line drawn along the Western boundary of the City of Louisville.
[5] Includes Grant, Mineral, and Tucker Counties.
[6] Includes all counties in Tennessee not named Districts I and I-I.
[7] Excludes Wayne and Appanoose Counties
[8] Includes all mines in Kentucky west of a north and south line drawn along the western boundary of the City of Louisville.
[9] Includes all counties in Colorado not named under District L.
[10] Includes Jackson, Larimer, Weld, Boulder, Adams, Arapahoe, El Paso, Douglas, Elbert, and Jefferson Counties.

NOTE.—Differences between districts in the foregoing minimum rates are not to be considered as fixing permanent wage differentials or establishing precedents for future wage scale

[2] Changed by Amendment No. 2.

a Missouri, Kansas, Arkansas, and Oklahoma, except shaft, drift, or slope mines in those States

b Shaft, drift, and slope mines to Missouri, Kansas, Arkansas, and Oklahoma

Differentials in Hourly Wage Rates Established by the Code — October 2, 1933.

Inside Skilled Labor

CODE NUMBER	DISTRICT	Cents per hour	DIST. A	DIST. B	DIST. C	DIST. D	DIST. E	DIST. F (Except Wayne & Appanoose Cos.)	DIST. F (Wayne & Appanoose Cos.)	DIST. G
			Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents
A	Pa-Ohio-Michigan-Panhandle	.575	-	-.030	-.050	-.003	+.050	+.013	-.005	-.106
B	Northern West Virginia	.545	+.030	-	-.020	+.027	+.080	+.043	+.025	-.076
C	S.West Va.,E.Kentucky,Upper Potomac Maryland, Virginia, So.Tennessee	.525	+.050	+.020	-	+.047	+.100	+.063	+.045	-.056
D	Indiana	.572	+.003	-.027	-.047	-	+.053	+.016	-.002	-.103
E	Illinois	.625	-.050	-.080	-.100	-.053	-	-.037	-.055	-.156
F	Iowa	.588	-.013	-.043	-.063	-.016	+.037	-	-.018	-.119
F	Iowa-Wayne & Appanoose Cos.	.570	+.005	-.025	-.045	+.002	+.055	+.018	-	-.101
G	Missouri-Kansas-Arkansas-Oklahoma	.469	+.106	+.076	+.056	+.103	+.156	+.119	+.101	-
H	Western Kentucky	.500	+.075	+.045	+.025	+.072	+.125	+.088	+.070	-.031
J	Alabama-Georgia-So.Tenn.(Hamilton & Rhea)	.425	+.150	+.120	+.100	+.147	+.200	+.163	+.145	+.044
J-1	Southern Tennessee	.480	+.095	+.065	+.045	+.092	+.145	+.108	+.090	-.011
K	New Mexico	.560	+.015	-.015	-.035	+.012	+.065	+.028	+.010	-.091
K	Southern Colorado	.555	+.020	-.010	-.030	+.017	+.070	+.033	+.015	-.086
L	Northern Colorado	.625	-.050	-.080	-.100	-.053	-	-.037	-.055	-.156
M	Utah	.680	-.105	-.135	-.155	-.108	-.055	-.092	-.110	-.211
N	Northern & Southern Wyoming	.678	-.103	-.133	-.153	-.106	-.053	-.090	-.108	-.209
O	Montana	.704	-.129	-.159	-.179	-.132	-.079	-.116	-.134	-.235
P	Washington	.675	-.100	-.130	-.150	-.103	-.050	-.087	-.105	-.206
Q	North & South Dakota	.500	+.075	+.045	+.025	+.072	+.125	+.088	+.070	-.031

Outside Common Labor

A	Pa-Ohio-Michigan-Panhandle	.450	-	-.030	-.050	+.075	+.050	+.050	+.033	-.040
B	Northern West Virginia	.420	+.030	-	-.020	+.105	+.080	+.080	+.063	-.010
C	S.West Va., E.Kentucky,Upper Potomac Maryland, Virginia, So.Tennessee	.400	+.050	+.020	-	+.125	+.100	+.100	+.083	+.010
D	Indiana	.525	-.075	-.105	-.125	-	-.025	-.025	-.042	-.115
E	Illinois	.500	-.050	-.080	-.100	+.025	-	-	-.017	-.090
F	Iowa	.500	-.050	-.080	-.100	+.025	-	-	-.017	-.090
F	Iowa-Wayne & Appanoose Cos.	.483	-.033	-.063	-.083	+.042	+.017	+.017	-	-.073
G	Missouri-Kansas-Arkansas-Oklahoma	.410	+.040	+.010	-.010	+.115	+.090	+.090	+.073	-
H	Western Kentucky	.375	+.075	+.045	+.025	+.150	+.125	+.125	+.108	+.035
J	Alabama-Georgia-So.Tenn.(Hamilton & Rhea)	.300	+.150	+.120	+.100	+.225	+.200	+.200	+.183	+.110
J-1	Southern Tennessee	.355	+.095	+.065	+.045	+.170	+.145	+.145	+.128	+.055
K	New Mexico & Southern Colorado	.489	-.019	-.049	-.069	+.056	+.031	+.031	+.014	-.059
L	Northern Colorado	.489	-.019	-.049	-.069	+.056	+.031	+.031	+.014	-.059
M	Utah	.560	-.110	-.140	-.160	-.035	-.060	-.060	-.077	-.150
N	Northern Wyoming	.568	-.118	-.148	-.168	-.043	-.068	-.068	-.085	-.158
O	Montana	.603	-.153	-.183	-.203	-.078	-.103	-.103	-.120	-.193
P	Washington	.500	-.050	-.080	-.100	+.025	-	-	-.017	-.090
Q	North & South Dakota	.400	+.050	+.020	-	+.125	+.100	+.100	+.083	+.010
N	Southern Wyoming	.555	-.105	-.135	-.155	-.030	-.055	-.055	-.072	-.145

Differentials in Hourly Wage Rates Established by the Code — October 2, 1933.

Inside Skilled Labor

CODE NUMBER	DISTRICT	DIST. S	DIST. J	DIST. J-1	DIST.K (New Mexico)	DIST.K (Sou.Colo.)	DIST. L	DIST. M	DIST. N	DIST. O	DIST. P	DIST. Q
		Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents
A	Pa-Ohio-Michigan-Panhandle	-.075	-.015	-.095	-.015	-.020	+.050	+.105	+.103	+.129	+.100	-.075
B	Northern West Virginia	-.045	-.120	-.065	+.015	+.010	+.080	+.135	+.133	+.159	+.130	-.045
C	S.West Va., E.Kentucky, Upper Potomac Maryland, Virginia, No.Tennessee	-.025	-.100	-.045	+.035	+.030	+.100	+.155	+.153	+.179	+.150	-.025
D	Indiana	-.072	-.147	-.092	-.012	-.017	+.053	+.108	+.106	+.132	+.103	-.072
E	Illinois	-.125	-.200	-.145	-.065	-.070	-	+.055	+.053	+.079	+.050	-.125
F	Iowa	-.088	-.163	-.108	-.028	-.033	+.037	+.092	+.090	+.116	+.087	-.088
F	Iowa-Wayne & Appanoose Cos.	-.070	-.145	-.090	-.010	-.015	+.055	+.110	+.108	+.134	+.105	-.070
G	Missouri-Kansas-Arkansas-Oklahoma	+.031	-.044	+.011	+.091	+.086	+.156	+.211	+.209	+.235	+.206	+.031
H	Western Kentucky	-	-.075	-.020	+.060	+.055	+.125	+.180	+.178	+.204	+.175	-
J	Alabama-Georgia-So.Tenn.(Hamiltos & Rhea)	+.075	-	+.055	+.135	+.130	+.200	+.255	+.253	+.279	+.250	+.075
J-1	Southern Tennessee	+.020	-.055	-	+.080	+.075	+.145	+.200	+.198	+.224	+.195	+.020
K	New Mexico	-.060	-.135	-.080	-	-.005	+.065	+.120	+.118	+.144	+.115	-.060
K	Southern Colorado	-.055	-.130	-.075	+.005	-	+.070	+.125	+.123	+.149	+.120	-.055
L	Northern Colorado	-.125	-.200	-.145	-.065	-.070	-	+.055	+.053	+.079	+.050	-.125
M	Utah	-.180	-.255	-.200	-.120	-.125	-.055	-	-.002	+.024	-.005	-.180
N	Northern & Southern Wyoming	-.178	-.253	-.198	-.118	-.123	-.053	+.002	-	+.026	-.003	-.178
O	Montana	-.204	-.279	-.224	-.144	-.149	-.079	-.024	-.026	-	-.029	-.204
P	Washington	-.175	-.250	-.195	-.115	-.120	-.050	+.005	+.003	+.029	-	-.175
Q	North & South Dakota	-	-.075	-.020	+.060	+.055	+.125	+.180	+.178	+.204	+.175	-

Outside Common Labor

									South. Wyo.	North. Wyo.		
A	Pa-Ohio-Michigan-Panhandle	-.075	-.150	-.095	+.019	+.019	+.110	+.105	+.118	+.153	+.050	-.050
B	Northern West Virginia	-.045	-.120	-.065	+.049	+.049	+.140	+.135	+.148	+.183	+.080	-.020
C	S.West Va., E.Kentucky, Upper Potomac Maryland, Virginia, No.Tennessee	-.025	-.100	-.045	+.069	+.069	+.160	+.155	+.168	+.203	+.100	-
D	Indiana	-.150	-.225	-.170	-.056	-.056	+.035	+.030	+.043	+.078	-.025	-.125
E	Illinois	-.125	-.200	-.145	-.031	-.031	+.060	+.055	+.068	+.103	-	-.100
F	Iowa	-.125	-.200	-.145	-.031	-.031	+.060	+.055	+.068	+.103	-	-.100
F	Iowa-Wayne & Appanoose Cos.	-.108	-.183	-.128	-.014	-.014	+.077	+.072	+.085	+.120	+.017	-.083
G	Missouri-Kansas-Arkansas-Oklahoma	-.035	-.110	-.055	+.059	+.059	+.150	+.145	+.158	+.193	+.090	+.010
H	Western Kentucky	-	-.075	-.020	+.094	+.094	+.185	+.180	+.193	+.228	+.125	+.025
J	Alabama-Georgia-So.Tenn.(Hamilton & Rhea)	+.075	-	+.055	+.169	+.169	+.260	+.255	+.268	+.303	+.200	+.100
J-1	Southern Tennessee	+.020	-.055	-	+.114	+.114	+.205	+.200	+.213	+.248	+.145	+.045
K	New Mexico & Southern Colorado	-.094	-.169	-.114	-	-	+.091	+.086	+.099	+.134	+.031	-.069
L	Northern Colorado	-.094	-.169	-.114	-	-	+.091	+.086	+.099	+.134	+.031	-.069
M	Utah	-.185	-.260	-.205	-.091	-.091	-	-.005	+.008	+.043	-.060	-.160
N	Southern Wyoming	-.180	-.255	-.200	-.086	-.086	+.005	-	+.013	+.048	-.055	-.155
O	Montana	-.228	-.303	-.248	-.134	-.134	-.043	-.048	-.035	-	-.103	-.203
P	Washington	-.125	-.200	-.145	-.031	-.031	+.060	+.055	+.068	+.103	-	-.100
Q	North & South Dakota	-.025	-.100	-.045	+.069	+.069	+.160	+.155	+.168	+.203	+.100	-
N	Northern Wyoming	-.193	-.268	-.213	-.099	-.099	-.008	-.013	-	+.035	-.068	-.168

Chapter IV (c)

Table IV

Labor Cost Per Ton for Yardage and Deadwork and Total Labor Cost

Before and After April 1, 1934 -- Bituminous Coal Industry

	Yardage and Deadwork Total - 10 Months Apr. 1934 Thru Jan. 1935	Total Labor Cost Total - 10 Months Apr. 1934 Thru Jan. 1935	Per Cent Yardage and Deadwork is of Total Labor Cost	Yardage and Deadwork Total - 3 Months Jan. - Feb. - Mar. 1934	Total Labor Cost Total - 3 Months Jan. - Feb. - Mar. 1934	Per Cent Yardage and Deadwork is of Total Labor Cost
Eastern Sub-Division 1/	$ .1257	1.2950	9.7	.1007	1.0650	9.5
Western Pennsylvania	.0567	1.1901	4.8	.0469	.9879	4.7
Ohio	.0543	1.1517	4.7	.0402	.9483	4.2
Michigan	.2905	1.9308	15.0	.2296	1.5534	14.8
Panhandle, West Virginia	.0985	1.1281	8.7	.0739	1.0110	7.3
Northern West Virginia	.0237	.9957	2.4	.0176	.7748	2.3
Average Division I - North	.0729	1.1858	6.1	.0589	.9730	6.1
Southern Number 1	.0795	1.1459	6.9	.0629	.9389	6.7
Southern Number 2	.0576	1.0884	5.3	.0384	.8698	4.4
Maryland	.0848	1.3338	6.4	.0767	1.1089	6.9
Upper Potomac	.1262	1.3066	9.7	.1102	1.1040	10.0
				1933 a/	1933 a/	1933
Western Kentucky	Did not report			Nov. Dec.	Nov. Dec.	Nov. Dec.
				.0034 .0038	.7268 .7082	0.5 0.5
Average Division I - South	.0685	1.1192	6.1	.0502	.9053	5.5
Total Division I	.0707	1.1519	6.1	.0546	.9397	5.8
Illinois (Deep and Strip)	.0205	.8663	2.4	.0184	.7715	2.4
Indiana (Deep and Strip)	.0080	.7191	1.1	.0058	.5906	1.0
				1933 a/	1933 a/	1933
Iowa (Deep and Strip)	Did not report			Nov. Dec.	Nov. Dec.	Nov. Dec.
(Deep &)				.2059 .2062	1.4650 1.4473	14.1 14.2
Total Division II (Strip)	.0174	.8291	2.1	.0151	.7245	2.1
Alabama	.1124	1.4110	8.0	.0773	1.1012	7.0
Southern Tennessee and Georgia	.1511	1.4261	10.6	.1300	1.1883	10.9
Total Division III	.1175	1.4130	8.3	.0848	1.1136	7.6
Southwestern (Kansas, Mo. & Okla.)	Did not report			.1542	1.3767	11.2
Arkansas and Eastern Oklahoma	Did not report			Jan. b/ Feb.	Jan. b/ Feb.	Jan. b/ Feb.
				.0599 .0531	1.5715 1.5326	3.8 3.5

1/ Excluding Maryland and Upper Potomac
a/ Did not report after Dec. 1933
b/ Did not report after February.

CHAPTER IV (c) APPENDIX AA

Huntington, W. Va.
July 26, 1934.

TO MEMBERS of the NORTH and SOUTH COMMISSION:

Operators:	Miners:
Chas. O'Neill	James Mark
J. D. A. Morrow	P. T. Fagan
W. L. Robinson	Percy Tetlow
J. D. Francis	Frank Miley
R. E. Taggart	Van A. Bittner
L. C. Gunter	Wm. Turnblazer
C. A. Cabell	Sam Caddy
	J. T. Saxton

Gentlemen:

It was understood at the last meeting of this Commission that I would prepare and send out a circular memorandum of my conception of the duties of the Engineers of the North and South Commission.

I have done this without having had the opportunity to discuss the matter with any other member of the North and South Commission, and nothing therein reflects views other than my own. I have not had the time to put on this what I would like to have had, and the matter should have more detailed study. In order that we may have something before us for discussion, I am mailing this to each member of the Commission, and also a copy to Mr. Berquist.

I do not know whether I will be able to personally attend this meeting on the 31st. If not, my alternate will be present.

I want to again call the Commission's attention to our action in eliminating cars containing less than three tons. I believe this is going to result in a greater distortion of figures than we thought at the time the matter was voted, and while I do not want to take up the time of the Commission, I believe that, in the interest of common accuracy, the matter should be given further consideration.

The earnings in all the districts in which I am interested show that the elimination of all 1-car starts (or 3 tons) makes a difference in the district of 22¢ a day. In other words, if the 1-car starts were eliminated, the earnings would be 22¢ more, and that would be shown on the reports agreed upon. In some of the districts where much smaller cars are used, the effect is greater than in the preliminary reports of the districts I refer to and the earnings may be increased an average as much as 44¢ a day over the real wage, or between 8% and 10% difference between what the earnings actually are and the indicated earnings.

What we all want is a record that will be comparable and stand for years, and that will not have to be explained any more than necessary. I realize that absolute mathematical accuracy in a record of this kind is hardly possible.

There was one other thing at the last meeting that, to my mind, was ambiguous, and that is the item of mines under 50,000 tons yearly capacity. In speaking of this, I had in mind that we were discussing companies with production of less than 50,000 tons. One company may have three or four hundred thousand tons production, while a number of its mines may have a production of less than 50,000 tons each. I believe that any company having a capacity of over 50,000 tons, should show their entire production, regardless of the capacity of the individual mines smaller than 50,000 tons. They should all be included.

The Engineers should carefully report the number of mines in each district having under 50,000 tons; the number of men employed in these mines; the percentage this tonnage bears to the total in the district, and the percentage the number of employed men bears to the total employed in the district.

Yours very truly,

(Signed)
James D. Francis

JDF/H

INFORMATION TO BE OBTAINED BY ENGINEERS
for
THE NORTH-SOUTH WAGE DIFFERENTIAL COMMISSION.

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1. "LIST OF OPERATING COMPANIES".

A complete list of operating companies, listing each mine and tonnage for 1933 and showing average daily tonnage, should be obtained. This list may be available at the Bureau of Mines.

2. "SECTIONS OF SEAMS".

Representative detailed sections of seams worked should be taken. These sections should show the character of the top and the bottom and the character and thickness of each parting.

3. "IMPURITIES IN SEAM WHICH ARE PAID FOR"

The average thickness of impurities, and/or top, and/or bottom, handled by the miner on a dead work basis should be shown and the percentage of this material per ton of coal should be computed. The present dead work rates should be given and the cost per ton of coal for handling this material should be computed.

4. "IMPURITIES IN SEAM INCLUDED IN LOADING RATE".

The thickness of seam impurities and/or top and/or bottom handled by the miner for which he receives no extra compensation should be obtained and a comparative statement in tons of such material handled and tons of coal loaded should be caluclated, and the percentage of material handled and coal loaded should be computed.

The amount of slate, impurities and waste coal handled by the miner for which he is not compensated, varies considerably in different districts and in different mines. In some cases the miner must handle approximately one ton of such waste material for each ton of coal loaded; while in other mines very little waste material has to be handled by the miner. This is neither fair to the miner nor to the producer. Accurate data should be collected by the engineers so that more uniform and moreequitable rates can be arrived at.

5. "CONDITION OF SEAMS".

The engineers should thoroughly observe and note the mining conditions of the seam as to grades, pitches, horsebacks, water, and all other unusual conditions.

6. "GENERAL PRACTICES".

The engineers should gather all available information as to the customs and practices in the various mines, such as:

a. In which mines are the miners required to clean the coal at the face and to what extent.

b. To throw back bug dust.

c. To sweep the face before shooting.

d. To timber his place and to what extent.

e. To bail water.

f. To gob partings or load in cars.

g. Whether the impurities have to be handled twice.

h. To place cars by hand or are they placed by motor; to push cars to and from face and entry.

i. To lay track and to what extent.

j. To drill holes in shooting top or bottom slate.

k. To scrap bottom.

l. Size and height of cars to determine whether coal can be easily loaded; type of machines; depth of cut and tons of coal per cut in both rooms and headings,

and all other practices or duties which might affect the amount of tonnage he is able to load per "man-start".

7. "PERCENTAGE OF DAY MEN".

The number of inside day men and the number of loaders employed should be obtained and the percentage of each class of workmen computed.

It is apparent that there is a difference in the services performed and the proportion employed of company men and loaders in the various districts and, therefore, a higher cost in some districts than in others for the company men. This difference in cost should be obtained and should be reflected in the piece worker's rates. The present rates are based on unlike things and unlike amounts of labor required and work performed.

8. "TONNAGE ELIMINATED IN N. R. A. REPORTS".

In the N. R. A. reports an elimination of three tons in counting man-starts will be permitted. This tonnage deducted from the total tonnage loaded should be obtained and its percentage of the total tonnage should be computed. The number of starts by miners preparing their working places during which start no coal is loaded and no man-start is counted, should be obtained.

9. "PICKING TABLES".

The number of men employed on picking tables and in cars, in cleaning coal, and the percentage of same as compared with the number of loader employed should be gotten. This is necessary in order to show comparatively the amount of cleaning done at the face by the miner and by company employees. The number required for this purpose varies considerably in different districts and in different mines.

10. "DEDUCTIONS FROM RATES".

The engineers should compile a schedule of all published rates and all deductions from same which are made because the loader is relieved of certain duties. These deductions are made for shearing, drilling, shooting, bug dusting, explosives when not furnished by the miner, and for other things. Where the miner buys his own explosives and shoots his own coal the cost per ton should be obtained. This data is necessary in order that these deductions be made on a more uniform basis than is now being done.

11. "EQUIPMENT AND MANAGEMENT".

The engineers should collect all available data as to the equipment of the mine; whether it is sufficient to supply the needs of the miners and provide them an opportunity to earn an average inside day wage; whether the equipment used is modern or obsolete. The time and effort necessary to earn the same wage is directly affected by the type and quantity of equipment.

Management and planning is an important factor in providing the miner an opportunity to earn fair wages with the least effort. If, due to inefficiency of management, lack of proper equipment and planning, the miner is not furnished with sufficient cars in which to load his coal and must wait on cars even though engaged in the work of handling impurities in the coal during the waiting period, the wage scale should be so adjusted as to allow him to earn an average day wage. This would promote both effort and efficiency on the part of the management.

IN CONCLUSION: We think that a sufficient number of capable engineers should be employed to secure ample data as above outlined which can be used in connection with the N. R. A. reports, in order that comparable rates between districts can be arrived at.

CHAPTER V 1/

COST OF PRODUCTION, SELLING AND ADMINISTRATION UNDER CODE CONDITIONS

A. Effect of N.R.A. Code on Costs

Prior to October 1933, when the Code became effective, a decade of downward price trend had driven the annual average price per ton for bituminous coal from $2.68 in 1923 to $2.20 in 1924, and $2.04 in 1925. In 1926 prices about held their own, but in 1927 fell to $1.99, in 1928 to $1.86, in 1929 to $1.78. This in spite of the fact that prices and general business conditions were on a steady upward curve during these latter years. The depression beginning in the fall of 1929 added new impetus to the price decline, until by 1932 the "average value" had sunk to $1.31. Due to the operation of the Code and a reversal of depression influences through the operation of general industry codification, 1933 rose to $1.34, and 1934 to $1.75. (*)

Costs necessarily follow in large degree the trend of prices, and the price or average realization betterments under the Code are directly traceable to the standardization of minimum wages at higher levels and maximum working hours at 8 daily, 40 weekly, coupled with price-fixing to support the resulting labor costs, which alone comprise from slightly under 60 to about 65 per cent of total costs in the different producing areas.

Full treatment of labor costs, wages, and wage differentials will be found in other chapters. It is necessary here to lay merely a foundation for understanding the direct relationship of labor cost to total cost, which inevitably follows price trends, even though they have not always kept pace. Year after year of increasing losses were experienced by the industry as a whole, beginning in 1925, until 1934, when the average realization of Divisions I, II and III combined (accounting for over 92 per cent of total U. S. production) showed a slight margin above the average costs as reflected in N.R.A. summaries.

The underlying causes during this pre-N.R.A. decade of toboganning price levels were many, chief among them being a large overcapacity to produce pressing on a market no longer showing a more or less dependable annual increase in demand; growing competition from other fuels; and notable strides in fuel economy. This potent pressure on prices might have been resistable had not a situation existed within the industry itself that lent full impetus to the downward pressure of other factors. This situation is found in the fact that while the northern producing areas, during the earlier half of the pre-code decade, were generally unionized

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1/ Prepared by Ellery B. Gordon and W. T. Crandell.

(*) All "average value" figures from U. S. Bureau of Mines data as summarized in table presented as Defendant's Exhibit 3a in case of James Walter Carter vs. Carter Coal Company et. al., files of N.R.A. Bituminous Coal Unit.

and bound by wage agreements, the south was largely non-union and independent of contracts as to hours of work or wage scales. Wages, constituting 60 per cent or more of the total cost, a larger percentage than in any other major industry, offered the one very substantial cost item that possessed flexibility. There developed (1) a continuous round of price reductions by non-union fields in a determined effort to extend their volume of business, followed by reductions in wages paid in order to permit such price cuts; (2) a resulting upward swing in the ratio of non-union tonnage to the industry's total tonnage; until (3) the union districts found themselves faced with the necessity of meeting this price competition or experiencing disastrous loss of business to the non-union fields. By 1927 and 1928 the Ohio and Pennsylvania fields had began to break away from their wage agreements in order to permit of price reductions and stem losses so far as possible. New wage agreements in Illinois and Indiana twice reduced wage scales, and the eastern fields eventually won non-union practically 100 per cent. Followed a continuance of the cycle of successive intersectional price and wage reductions, until average prices during the depression years became so low that for 1932 they resulted in an industry loss of over $51,000,000. (*)

It may fairly be said that during this period the intense competition was basically one of wage rates, non-union workers being obliged to accept what the successive price cuts permitted the operators to pay them.

Although no cost data for the months preceding the Code are available, N.R.A. Form C, covering Employment and Earnings, called for reporting mines to show on their December returns the rates of pay in effect in May, 1933. From this data for May and December from identical mines, it is possible to arrive at approximate wage-rate increases under the Code as compared with pre-Code conditions. The December wage data were projected to show what the earnings of workers would have been had the May rates prevailed in December. From the data reported as actual earnings in December and the wage rates paid in May, it is possible to calculate the increases in actual December earnings over what the May rates (had they continued in effect) would have produced in December. This estimated increase is slightly over 50 per cent in Division I, and about 51 per cent in Division III.

Translating these earnings into Labor Cost per ton, the estimated figures for May were set against the reported costs for December 1933, and comparisons of Realization just prior to and under the first period of the Code, up through March 1934. Cost Table 106 ("Labor Cost per ton May 1933, compared with Labor Cost per ton 10 months April 1934 through January 1935; Realization per ton January through September 1933 compared with Realization per ton April 1934 through January 1935") shows the increases in Labor Cost effected by the Code with its 8-hour day and nationally effective wage scales and by Amendment 1 thereto with its 7-hour day and increased wage rates. Because of the inter-dependence of

(*) "Statistics of Income," 1932, U. S. Bureau of Internal Revenue; shown in Defendant's Exhibit 6a, James Walter Carter vs. Carter Coal Company, et. al., files of N.R.A., Bituminous Coal Unit files.

labor costs and prices, the average realization per ton for each of these periods is shown for comparison.

Since labor cost bears known relationships to total cost in the first or 8-hour-day period of the Code ending March 31, 1934, as well as in the second or 7-hour-day period beginning April 1, 1934, and since labor cost is the only element of total cost for which pre-code comparisons can be made, these data are only partially indicative of the full Code increase in total costs. For those areas whose May 1933 rates are available, the immediate effect of the Code on labor cost alone was as follows:

	Average Increase per Ton
Eastern Pennsylvania	26.4 cents
Western Pennsylvania	37.9 "
Ohio	30.5 "
Northern West Virginia	29.3 "
Southern Subdivision No. 2	32.8 "
Maryland and Upper Potomac	43.4 "
Alabama	43.5 "

The extent of increases in other cost items between May and December 1933 is not known.

Accepting these May 1933 labor costs as representing probably a somewhat higher average than would have been found had all mines reported, logically assuming that those who refrained may well have been those paying still lower rates in the pre-code period, it can safely be said that total costs increased by something more than the above averages. It is well known that the spring and summer of 1933 stimulated general activity that turned both production and price curves upward for the first time since 1930, which undoubtedly affected other items of tituminous coal costs as well s labor costs.

The average cost per ton again rose sharply with the adoption of Amendment 1, reducing working hours to 7 a day, 35 a week, and increasing basic wage rates. This increase is well illustrated in the charts presented with this chapter showing by months the average costs of each code authority Division and Subdivision. Discussions of these charts and accompanying tables occur later.

Combining the labor cost increase over May 1933 with the increase in total cost in the second, or 7-hour-day period of the Code, a total average cost increase of at least the following cents per ton is found in those areas for which comparative data are available:

Estimated Increases in Cost Under N.R.A. Code

Division I (*)	Increase in Labor Cost December '33 over May '33	Increase in Total Cost April '34-January '35 over Nov. '33-March '34	Average increase in total cost under code, something more than
Eastern Pa.	$ .264	$ .390	$ .654
Western Pa.	.379	.300	.679
Ohio	.305	.279	.584
Northern W. Va.	.293	.352	.645
Southern Subdivision No. 2	.328	.278	.606
Md. & Upper Potomac	.454	.730	.764
Average	$ .332 (*)	$ .512 a/	$ .644

It must be emphasized that the first column represents figures composed of the labor cost increase only, insofar as the immediate effect of the Code on costs is concerned. Unquestionably some unknown increases occurred between May and December 1933 in the cost of supplies, and quite possibly in some fixed charges, selling and administrative expenses. For that reason the indicated "increases in total cost under code" represent a minimum figure - the actual increases were probably greater by some unknown amounts.

Of the above estimated total increases, labor cost represented the following amounts, for comparison:

	Increase in Total Cost under Code something more than:	Increase in Labor Cost under Code
Eastern Pa.	$ .654	$ .485
Western Pa.	.679	.564
Ohio	.584	.498
No. West Va.	.645	.513
Southern Subdivision No. 2	.606	.525
Md. & Upper Potomac	.764	.613
Average	$ .644	$ .497

Footnote on next page.

Division II was already operating under a union scale agreement the basic rates of which were incorporated in the approved Code. No record of pre-code 1933 costs is available, but presumably any increases experienced in December as compared with May 1933, would have been minor so far as labor cost is concerned.

The final word as to increase in total cost in all of Division I has to be that it was probably somewhere around 65 cents per ton during the Code period. In Division II, it was perhaps something more for deep mines than the 12½ cents, caused by Amendment 1 which instituted the 7-hour day and 35-hour week; for strip mines something over 21 cents.

In Division III the total increase in labor cost alone was 66.6 cents per ton during the Code period. December 1933 labor cost for Division III was 38.3 cents over May 1933; the 10-months' period under Amendment 1 averaged an increase in total cost of 35 cents per ton. It is safe to say that Code operation saw a total increase in cost of over 75 cents per ton.

B. Cost Reporting During Code Period

The purpose of monthly cost reporting to N.R.A. was (1) to provide composite cost figures for comparison with the average realization as one measure of the reasonableness and result of minimum prices fixed under the Code, (2) inform the Administration as to the effect of the adoption of the Code and Amendment thereto upon labor and other costs, (3) to make available to the industry generally for its information and guidance current summeries and averages of costs, realization, and margins. (*)

Cost Data Typical and Representative

(a) A typical operations excluded from final summeries: It is plain that any summarized totals should be representative of typical operations, costs that are not distorted by abnormal or subnormal conditions. To this end, the editing staff at Washington excluded some mine reports from the tabulations. (**)

Footnote from other page.

(*) Exclusive of Michigan, Panhandle of W. Virginia, Southern Subdivision No. 1, Western Kentucky, for which May 1933 data were too incomplete for use. The average for these areas of Division I for May 1933 is weighted by the total tons produced as reported in U. S. Bureau of Mines W. C. R. 922, March 11, 1935.

a/ Average for these areas of Division I weighted by total tons produced these months by each area, as reported in U. S. Bureau of Mines W. C. R. 922, March 11, 1935, and W. C. R. 932 Supplement, May 25, 1935.

(*) For full description of forms used and procedure followed, see Appendix I.

(**) The bases for exclusion of mine reports from tabulation are discussed in Appendix I.

APPROXIMATE REPRESENTATION OF TONNAGE SHOWN IN STATISTICAL SUMMARIES AS COMPARED WITH ESTIMATED TOTAL COMMERCIAL PRODUCTION

	November - December, 1933					January - February - March, 1934					5 Months — November 1933 - March 1934					10 Months — April 1934 - January 1935				
	Total Production (000)	100% of Captive Production (000)	Total Commercial Plus Mixed Production (000)	N. R. A. Reported Production (000)	% N.R.A. Prod. of Comm.Prod.	Total Production (000)	100% of Captive Production (000)	Total Commercial Plus Mixed Production (000)	N. R. A. Reported Production (000)	% N.R.A. Prod. of Comm.Prod.	Total Production (000)	100% of Captive Production (000)	Total Commercial Plus Mixed Production (000)	N. R. A. Reported Production (000)	% N.R.A. Prod. of Comm.Prod.	Total Production (000)	100% of Captive Production (000)	Total Commercial Plus Mixed Production (000)	N. R. A. Reported Production (000)	% N.R.A. Prod. of Comm.Prod.
Western Sub-Div.	6,593	820	5,773	4,490	77.8	11,537	1,541	9,996	8,289	82.9	18,130	2,361	15,769	12,779	81.0	30,137	4,026	26,111	20,249	77.55
Western Penna.	9,259	2,618	6,641	6,166	92.8	14,865	4,688	10,177	9,012	88.6	24,124	7,306	16,818	15,178	90.2	43,949	13,862	30,087	26,454	87.93
Ohio	3,704	511	3,193	2,089	65.4	6,630	840	5,790	3,756	64.9	10,334	1,351	8,983	5,845	65.1	16,276	2,062	14,214	9,695	68.21
Panhandle	714	107	607	448	73.8	1,152	177	975	184	18.9	1,866	284	1,582	632	39.9	3,178	488	2,690	1,966	73.09
Michigan	110	---	110	122	111.0	225	---	225	181	80.4	335	---	335	303	90.4	478	---	478	347	72.59
Northern W. Va.	3,553	372	3,181	2,717	85.4	6,253	742	5,511	4,367	79.2	9,806	1,114	8,692	7,084	81.5	14,696	1,743	12,953	10,468	80.82
Southern No. 1	6,445	212	6,233	5,225	83.8	11,962	359	11,603	10,647	91.8	18,407	571	17,836	15,872	89.0	34,731	1,042	33,689	32,294	95.86
Southern No. 2	10,530	962	9,568	8,166	85.3	19,396	1,825	17,571	13,213	75.2	29,926	2,787	27,139	21,379	78.8	59,732	5,621	54,111	36,836	68.07
Western Ky.	1,479	---	1,479	910	61.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total Div. I	42,387	5,602	36,785	30,333	82.5	72,020	10,172	61,848	49,649	80.3	112,928	15,774	97,154	79,072	81.4	203,177	28,844	174,333	138,309	79.34
Illinois	7,886	783	7,103	6,215	87.5	13,009	1/ 1,292	11,717	10,248	87.5	20,895	1/2,075	18,820	16,463	87.5	32,973	3,274	29,699	26,262	88.43
Indiana	2,993	41	2,952	2,365	80.8	4,725	1/ 64	4,661	3,599	77.2	7,718	1/ 105	7,613	5,984	78.6	11,887	162	11,725	8,893	75.85
Iowa	693	76	617	414	67.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total Div. II	11,572	900	10,672	9,014	84.5	17,734	1,356	16,378	13,847	84.5	28,613	2,180	26,433	22,447	84.9	44,860	3,436	41,424	35,155	84.87
Ala., So. Penn., Georgia Total Div. III	1,697	446	1,251	943	75.4	3,176	2/ 1,165	2,011	1,474	73.3	4,873	1,611	3,262	2,417	74.1	1/ 7,423	1/ 2,722	2/ 3/ 4,701	1/ 4,279	91.02
Total Div. IV	1,711	94	1,617	945	58.4	2,633	1/ 145	2,488	4/1,225	49.2	4,344	1/ 239	4,105	4/2,171	52.9	Not Available				
Total Div. V	4,095	898	3,197	2,576	80.6	5,142	1/ 1,128	4,014	5/2,559	63.8	9,237	1/2,026	7,211	5/5,134	71.2	Not Available				
TOTAL U. S.	6/ 61,462	7/ 7,940	8/ 53,522	8/ 43,811	8/ 81.9	6/ 100,705	6/ 13,966	6/ 86,739	6/ 68,754	6/ 79.3	6/ 159,995	6/ 21,830	6/ 138,165	6/ 111,241	6/ 80.5	I/ 255,460	I/ 35,002	I/ 220,458	I/ 177,743	I/ 80.62

* Total Production, Bureau of Mines, minus the Production of 100% Captive Mines leaves Commercial and Mixed (mixed meaning partly captive and partly commercial) to compare with N.R.A. Commercial Tonnage

1/ Based on 1933 data; % of captive out available for 1934
2/ As submitted by Division III through H. S. Salmon, Presidential Member
3/ Data for period April 1934 through December 1934 only
4/ Does not include Arkansas and Eastern Oklahoma for March
5/ Exclusive of Southern Wyoming, Southern Colorado and New Mexico and North Dakota for March
6/ Exclusive of Western Kentucky and Iowa, Texas and Alaska; also of Ark. & E. Okla., So. Wyo. So. Colo., N. Mex., N. D., after Feb. 1934.
7/ Total of Division I (excluding Western Kentucky), Division II (excluding Iowa), and Division III
8/ Excluding Texas and Alaska

(b) Substantial Per Cent of Total Production Represented in Summaries as Published, November 1933 through January 1935: The tonnage covered by mine reports tabulated, as published in the 3 volumes November and December 1933; January, February, March 1934; and April 1934 through January 1935; all inclusive, comprises satisfactory representation of the commercial production in each of those periods. The accompanying table shows this comparison in detail.

The coverage in per cent of total production (as reported by the U. S. Bureau of Mines) for November-December, 1933, is 71.2%, January-February-March, 1934, is 65.8%. After April, 1934, Divisions IV and V did not report and for April 1934 through January 1935, the coverage is 61.2% of the total U. S. production, but 66.6% of the production of Divisions I, II, and III, which are included in the published summaries.

These percentages, however, are not a true measure of the high degree to which these summaries are representative. A fairer measure is that based on the proportion of tonnage included in the summaries as compared with the "Commercial and Mixed" tonnage produced, as shown in the table.

C. Factors Affecting Production Cost.

1. Number of Days Tipple Started, or Available Working Time During the Month: Certain upkeep work is necessary whether a mine is operating or not (such as pumping, repairing of props, etc.) plus inescapable overhead such as property taxes, salaries, depreciation on certain equipment, property insurance, etc. For this reason, the cost per ton during a month of light operation will be considerably higher than any month of full operation, other things being about equal. A mine which has booked business that will enable it to operate 12, 16 or 21 days in a month will show a progressively lower cost per ton for its operation during that month than if it were able to operate only 8 days. Mine operators are at times faced with the problem whether to accept orders at cost or below cost in order to operate at a smaller loss, as against the known loss from remaining idle.

An approximate measure of the influence on production cost of the number of working days per month is ascertained in the following tabulations (*) of production cost items for specified number of working days. This table is prepared from operators' reports furnishing cost data for working days, idle days and Sundays and holidays. For all deep mines in Eastern Subdivision of Division I, for example, 113 mines reported an average of 19 tipple starts in January 1935 and a total output of 1,637,496 net tons at a production cost of $1.8462 per ton. Labor and supply costs are segregated, in aggregates, between average working day, average idle day, and average Sunday and holiday. The average numbers of working days, idle days, and Sundays and holidays are also reported, 19.0, 7.0, and 5.0 respectively, so that the per day average variable costs are determined by division. Variations in working days connote equal but opposite variations in idle days, Sundays and holidays, being determined by law and custom, are determinate for any one month.

(*) Bituminous Coal Statistics, April, 1934 through January 1935, sheet AP1, page 24 is appended.

Thus, it is possible to calculate the approximate variable cost per ton, assuming the output to vary directly with and proportionately to the number of days worked, for any combination of working and idle days. Fixed charges are those costs that remain constant in amount per month such as taxes on mine property, etc.; or those costs that are charged at a fixed rate per ton regardless of output, such as royalties and the like. Projections are calculated by reducing aggregate variable costs to aggregate costs per working day, per idle day, and per Sunday or holiday and then by multiplying these respective per day aggregates by the number of working or idle days comprising any desired combination. To these aggregates are added the aggregate costs of fixed charges (those constant in amount regardless of output and those varying in aggregate directly with the output). Per ton costs are obtained, of course, by dividing the aggregate costs thus obtained by the output which is assumed to vary with the number of days worked.

Costs projected by this method are used repeatedly throughout this chapter, as a means of eliminating the factor of days worked, to establish an approximate measure of the real increase in costs under the code.

2. Geological Factors: By this is meant such natural factors as thickness of seam; degree and direction of inclination or pitch (with respect to natural drainage); prevalence or practical absence of "faults" for example, squeezing out of coal for a varying distance involving "yardage and deadwork" before workable coal resumes; folds in the underlying or overhead strata necessitating the removal of rock or slate to maintain working height; widening of draw slate, overlying the coal and taken down for the purpose of safety in roof; and many others which involve temporary mining of rock or other dead-loss operations.

Examples of these factors do not stand out in the group averages as published. Individual mines, however, when reporting on Form A, were requested to fill in the blank: "State any special local condition that affects production cost or market value for this period". Below are quoted several of the replies appearing on Form A reports from mines which showed in certain months an unusually high cost in some items, either as compared with their own normal, or as compared with the district average:

"Extremely bad roof".
"Cap and bone coal gobbed, 8 inches".
"Partings in seams; low coal; heavy draw slates".
"Bad roof".

The effect of yardage and deadwork on production cost is direct. In the following few examples from unidentified mine reports for successive months, this "yardage and deadwork" item is one of the factors in the higher cost of producing in one month than in the other:

EXAMPLE: - 1	1st Month	2nd Month
No. of days tipple started	19	20
Production per day	1,599 tons	1,622tons
Item 5c -Yardage & Deadwork	$0.1607 per ton	0.1450 per ton
Producing cost	$1.9793 " "	1.9638 " "

R. R. A. Form 4 Min. Sheet No. AP-1

Division No. I — EASTERN SUBDIVISION — TOTAL SUBDIVISION — ALL SIZES — COMMERCIAL — DEEP

Form A.—OPERATING DATA—ITEMS ENTERING INTO TOTAL PRODUCTION COSTS TABLE NO A1-2

FOR SPECIFIED NUMBER OF WORKING DAYS

Period Covered JANUARY 1935

Line No.	Name	(1)	(2)	(3)	(4)	(5)	Avg. Normal Working Day (6)	(7)	(8)	(9)	(10)	Avg. Idle Day (11)	(12)	(13)	(14)
		117	19.0	20	54	1627496	86097	109362	22592	131954		8946	4781	13727	
			8	17	5		687776	874096	180736	1055632	.15326	161038	86058	247086	.3598
			10	16	5		860990	1093630	225920	1319560	.15326	143136	76496	219632	.2551
			12	14	5		1033160	1312300	271104	1583404	.15326	125840	66932	192178	.1860
			14	13	5		1205357	1531068	316288	1847356	.15326	107352	57372	164724	.1367
			16	10	5		1377552	1749792	361472	2111264	.15326	89460	47810	137270	.0996
			18	8	5		1549746	1968516	406656	2375172	.15326	71568	38248	109816	.0708
			19.0	7.0	5		1635843	2077878	429248	2507126	.15326	62622	33467	96089	.0587
			20	6	5		1721940	2187240	451840	2639080	.15326	53676	28686	82362	.0478
			21	5	5		1808037	2296602	474432	2771034	.15326	44730	23905	68635	.0380

Line No.	Avg. Sunday and Holiday (15)	(16)	(17)	(18)	Total Mine Costs – Labor (19)	(20)	Supplies (21)	(22)	Items Usually on Fixed Amount Basis (23)	(24)	Items Usually on a Per Ton Basis (25)	(26)	Total Fixed Charges (27)	(28)	Total All Production Cost (29)	(30)	(31)
	3234	3369	6603						211295		13062					18462	22937
	16170	16845	33015	.0479	1052040	15275	283639	.4118	211295	.3068	130406	.1517	315791	.4585	1651524	23978	
	16170	16845	33015	.0384	1252926	14552	319261	.3708	211295	.2454	130620	.1517	341915	.3971	1914102	22230	
	16170	16845	33015	.0320	1453758	14071	354883	.3435	211295	.2045	156744	.1517	368039	.3562	2176680	21068	
	16170	16845	33015	.0274	1654590	13727	390505	.3240	211295	.1753	182868	.1517	394163	.3270	2439258	20237	
	16170	16845	33015	.0240	1855422	13469	426127	.3093	211295	.1534	208992	.1517	420287	.3051	2701836	19613	
	16170	16845	33015	.0213	2056254	13268	461749	.2979	211295	.1364	235116	.1517	446411	.2881	2964414	19128	
	16170	16845	33015	.0202	2156670	13184	479560	.2931	211295	.1292	248178	.1517	459473	.2809	3095703	18924	
	16170	16845	33015	.0192	2257086	13108	497371	.2888	211295	.1227	261240	.1517	472535	.2744	3226992	18740	
	16170	16845	33015	.0182	2357502	13039	515182	.2849	211295	.1169	274302	.1517	485597	.2686	3358281	18574	

Division No. I — EASTERN SUBDIVISION — EXCLUDING MD & UPPER POTOMAC — ALL SIZES — COMMERCIAL — DEEP

Form A.—OPERATING DATA—ITEMS ENTERING INTO TOTAL PRODUCTION COSTS TABLE NO. A1-2-1

FOR SPECIFIED NUMBER OF WORKING DAYS

Period Covered JANUARY 1935

Line No.	Name	(1)	(2)	(3)	(4)	(5)	Avg. Normal Working Day (6)	(7)	(8)	(9)	(10)	Avg. Idle Day (11)	(12)	(13)	(14)
		97	19.1	6.9	54	1518915	79646	101114	21003	122117		7480	4599	12079	
			8	17	5		636752	808912	168264	977176	.15345	153640	81782	235422	.3709
			10	15	5		795940	1011140	210330	1221470	.15345	135680	73584	209264	.2637
			12	14	5		955128	1213368	252396	1465764	.15345	117720	64386	182106	.1923
			14	12	5		1114316	1415596	294462	1710058	.15345	101760	55188	152908	.1413
			16	10	5		1273504	1617824	336528	1954352	.15345	81800	45990	127790	.1030
			18	8	5		1432692	1820052	378594	2198646	.15345	67840	36792	104632	.0732
			19.1	6.9	5		1521640	1931077	401730	2332807	.15345	55512	31723	90245	.0595
			20	6	5		1591880	2022280	420660	2442940	.15345	50880	27594	78474	.0494
			21	5	5		1671474	2123394	441693	2565087	.15345	42400	22995	65395	.0392

Line No.	Avg. Sunday and Holiday (15)	(16)	(17)	(18)	Total Mine Costs – Labor (19)	(20)	Supplies (21)	(22)	Items Usually on Fixed Amount Basis (23)	(24)	Items Usually on a Per Ton Basis (25)	(26)	Total Fixed Charges (27)	(28)	Total All Production Cost (29)	(30)	(31)
	3107	3206	6312						197221		13361					18504	20945
	15535	16025	31560	.0497	977087	15393	207071	.3262	197221	.3107	98088	.1545	295309	.4652	1539467	24253	
	15535	16025	31560	.0398	1168255	14660	241939	.3780	197221	.2486	122610	.1545	319831	.4031	1782135	22461	
	15535	16025	31560	.0331	1347623	14150	277807	.2945	197221	.2078	147132	.1545	344353	.3619	2020783	21066	
	15535	16025	31560	.0284	1532891	13800	315675	.2842	197221	.1775	171654	.1545	368875	.3320	2259441	20212	
	15535	16025	31560	.0248	1718159	13534	349543	.2749	197221	.1554	196176	.1545	393397	.3099	2500099	19732	
	15535	16025	31560	.0221	1903427	13327	383411	.2681	197221	.1381	220698	.1545	417919	.2926	2740757	19374	
	15535	16025	31560	.0208	2005326	13232	409488	.2966	197221	.1304	234185	.1545	431406	.2807	2876217	19005	
	15535	16025	31560	.0199	2088695	13162	426779	.2926	197221	.1239	245220	.1545	442441	.2788	2995015	18876	
	15535	16025	31560	.0179	2181328	13091	450713	.2895	197221	.1180	257481	.1545	454702	.2729	3116740	18705	

Division No. I — EASTERN SUBDIVISION — & BRUCETON? [illegible] — ALL SIZES — COMMERCIAL — DEEP

Form A.—OPERATING DATA—ITEMS ENTERING INTO TOTAL PRODUCTION COSTS TABLE NO. A1-2-18

FOR SPECIFIED NUMBER OF WORKING DAYS

Period Covered JANUARY 1935

Line No.	Name	(1)	(2)	(3)	(4)	(5)	Avg. Normal Working Day (6)	(7)	(8)	(9)	(10)	Avg. Idle Day (11)	(12)	(13)	(14)
		20	20.2	57	54	217023	10676	13037	2991	16028		727	568	1295	
			8	17	5		85408	104296	23928	128224	15008	13086	9144	22230	.2603
			10	15	5		106760	130370	29910	160280	15008	11632	8128	19760	.1851
			12	14	5		128112	156444	35892	192336	15008	10178	7112	17290	.1350
			14	12	5		149464	182518	41874	224392	15008	8724	6096	14820	.0992
			16	10	5		170816	208592	47856	256448	15008	7270	5080	12350	.0723
			18	8	5		192168	234666	53838	288504	15008	5816	4064	9880	.0514
			20	6	5		213520	260740	59820	320560	15008	4362	3048	7410	.0347
			20.2	5.7	5		215723	263419	60719	325765	15008	4144	2896	7040	.0325
			21	5	5		224196	273587	62811	336378	15008	3635	2540	6175	.0276

Line No.	Avg. Sunday and Holiday (15)	(16)	(17)	(18)	Total Mine Costs – Labor (19)	(20)	Supplies (21)	(22)	Items Usually on Fixed Amount Basis (23)	(24)	Items Usually on a Per Ton Basis (25)	(26)	Total Fixed Charges (27)	(28)	Total All Production Cost (29)	(30)	(31)
	152	315	467						31440		1690					18799	19316
	760	1575	2335	.0273	118062	13823	24407	.2857	31440	.3681	13520	.1583	44960	.5264	197649	23144	
	760	1575	2335	.0219	142662	13363	29613	.2710	31440	.2945	16900	.1583	48340	.4528	230615	21601	
	760	1575	2335	.0182	167242	13054	34579	.2680	31440	.2454	20280	.1583	51720	.4037	263581	20573	
	760	1575	2335	.0156	191862	12837	39546	.2615	31440	.2104	23660	.1583	55100	.3686	296567	19838	
	760	1575	2335	.0136	216462	12672	44513	.2191	31440	.1840	27040	.1583	58480	.3424	329453	19287	
	760	1575	2335	.0121	241062	12544	49477	.2095	31440	.1636	30420	.1583	61860	.3219	362377	18858	
	760	1575	2335	.0109	265662	12442	54443	.2018	31440	.1473	33800	.1583	65240	.3056	395345	18516	
	760	1575	2335	.0107	269352	12428	55187	.2008	31440	.1450	34307	.1583	65747	.3036	400287	18470	
	760	1575	2335	.0104	277962	12398	56926	.1986	31440	.1402	35490	.1583	66930	.2985	411818	18369	

THE COST FIGURES ON LINE 1, COLUMNS 6 TO 31, REPRESENT 1-DAY COSTS. FIGURES ON OTHER LINES ARE PROJECTED FOR THE NUMBER OF WORKING DAYS INDICATED IN COLUMN 2.

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EXAMPLE: - 2	1st Month	2nd Month
No. of days tipple started	20	23
Production per day	497	487
Item 5 c - Yardage and Deadwork	$0.0934 per ton	$0.1728 per ton
Producing cost.	2.0668 " "	$2.0862 " "

EXAMPLE: - 3.		
No. of days tipple started	18	19
Production per day	396 tons	493 tons
Item 5c -Yardage & Deadwork	$0.1458 per ton	$0.2368 per tor
Producing cost	$1.9403 " "	$2.1026 " "

In Examples 2 and 3, other factors also operated to affect cost: In Example 2, an increase of about 8 cents in "Yardage and Deadwork" in the 2nd month was nearly offset by the influence of 3 days increased working time; in Example 3, various other influences added to the increase in cost in the 2nd month.

3. Method of Mining Followed: There are technical advantages attaching to the various general methods of mining - but engineers will often differ as to the most economical method to follow under particular conditions. Pick mining, of course, is the only method available under certain conditions, the conditioning factors being thickness of seam, pitch (incline) of seam, etc., which may preclude the use of cutting machinery and/or loading machines. But in mines where leading devices can be used, the cost of production will be directly affected by the extent to which mechanization has been installed. To a degree, the use of mechanical aids to production is limited by natural and geological conditions, of course; also in some instances by the opposition of labor, and in some instances by either ultra-conservatism or financial weakness on the part of management or owner.

The introduction of cutting machines, mechanical loading machines, power locomotive hauling, and other inside labor and time saving equipment has been one of the outstanding factors in the lowering of production costs by increasing the output per man-day. This subject has been specially treated in Chapter I.

4. Productivity of Men and Mine: It is so obvious as to require mere mention, that the man-day output bears directly on the production cost per ton. The possible man-day output is conditioned by the many geological characteristics, mining methods, and degrees of mechanization, already mentioned. Other conditioning factors, as between men, rest upon willingness, ambition, energy - and between groups, upon the spirit which animates each group. All these conditions together more or less determine the productivity of one mine as compared with another, or the rate of daily output in different periods in the same mine.

5. Unavoidable or Unpredictable Interruptions: Among such factors in cost may be mentioned breakdowns in machinery, power, ventilation; accidents of a major character such as the fall of an elevator with casualties, an explosion with casualties, any fatal accident - on account of a major inside accident mining customarily has ceased for at least the balance of that day. Labor suspensions or strikes or lockouts are not to be classed in this category, since ordinarily such cessation of

work will be predictable for at least a few days, often a few weeks.

6. Other factors: The usual differences from month to month or from mine to mine due to management methods, tax variations, capital costs, etc., are of course general throughout the industry, but in the aggregate offset each other to some extent, and are inherent in any industry's averages.

D. Importance of Principal Cost Items with Relation to Total Cost.

A recapitulation of the percentage borne by each principal group of items in selected subdivisions shows the relationships and an indication of varying changes in the percentages between the two clearly defined periods of the N.R.A. Code:

Percentage of Total Cost Represented by Constituent Cost Items (*)

8-Hour Day Period

Subdivision	Labor Cost	Mining Supplies	Misc. & Fixed Charges	Prod'n Cost	Selling and Adm.
Eastern Pa. (excl. Md. & U.P.)	61.51	14.89	15.35	91.75	8.25
Western Pa.	60.18	12.86	20.40	93.44	6.56
Ohio	62.55	12.53	16.08	91.16	8.84
No. West Va.	58.92	12.30	16.93	88.15	11.85
Southern #1	56.89	13.84	19.05	89.78	10.22
Southern #2	56.82	13.64	17.98	89.44	11.56
Ind.- Deep	54.31	19.89	16.30	90.50	9.50
Ind. - Strip	32.45	23.56	30.07	86.08	13.92
Ill. - Deep	60.22	16.41	14.10	90.79	9.21
Ill. - Strip	32.11	24.50	28.35	84.96	15.04
Alabama	56.60	16.67	16.44	89.71	10.29

(*) Source - Cost Tables 6, 17, 31, 36, 41, 46, 60, 61, 66, 67, 78 this Chapter.

Percentage of Total Cost Represented
by Constituent Cost Items (*)

7-Hour Day Period

Subdivision	Labor Cost %	Mining Supplies %	Misc. & Fixed Charges %	Prod'n Cost %	Selling and Adm. %
Eastern Pa. (excl. Md. & U.P.)	61.03	15.05	15.14	91.22	8.78
Western Pa.	61.32	12.96	18.89	93.17	6.83
Ohio	63.87	12.95	14.72	91.54	8.46
No. West Va.	59.73	11.80	16.15	87.68	12.32
Southern #1	58.85	13.93	17.07	89.85	10.15
Southern #2	59.81	13.23	16.33	89.37	10.63
Ind. - Deep	53.73	20.35	16.21	90.29	9.71
Ind. - Strip	34.73	26.03	25.21	86.02	13.98
Ill. - Deep	59.51	15.62	13.57	89.70	10.30
Ill. - Strip	34.36	25.82	24.57	84.75	15.25
Alabama	60.82	16.46	13.81	91.09	8.91

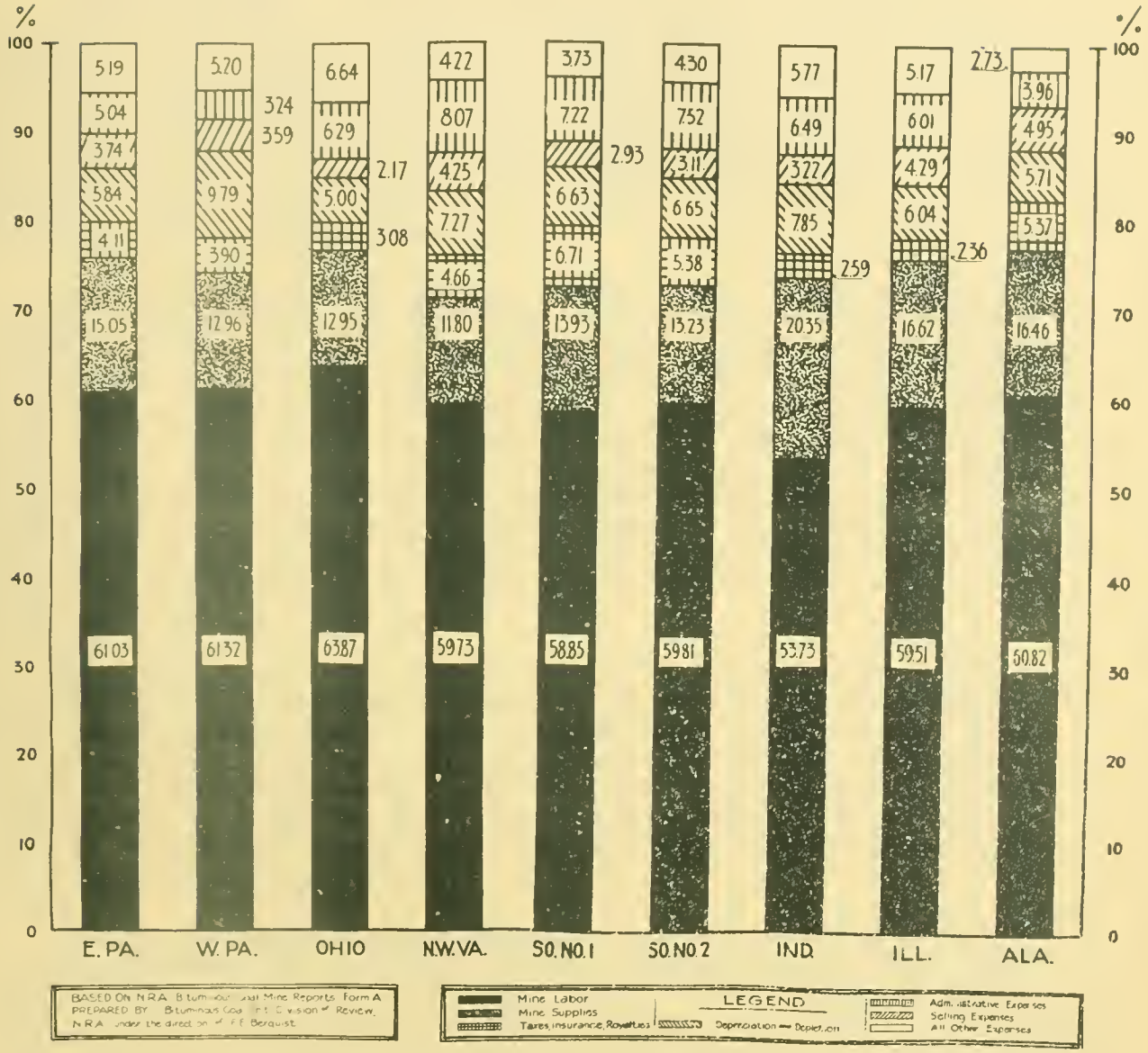
(*) Source - Cost Tables 6, 17, 31, 36, 41, 46, 60, 61, 66, 67, 78 this Chapter.

The accompanying cost chart number 18 illustrates graphically the percentage relationships in these selected areas for the 7-hour day period, April 1934 through January 1935, as a whole.

Labor Cost: It has been repeatedly stated in public hearings that labor cost is the controlling item, averaging generally between 60 and 65 per cent of the total. The wage rates that lie behind this cost element, being at once the largest and most flexible cost factors, have been depressed as a means to price cuts during times of sectional struggle for business, particularly during the period 1924 to 1933 (see details in labor and price sections of this study).

All the principal areas average around the accepted range of 60 to 65 per cent of the total. Exceptions are Southern Subdivisions 1 and 2 of Division I, and the Indiana deep mines, which show in the first or 8-hour day period a labor cost nearer 55% than 60% of the total. In the second period, labor cost in Southern No. 1 and 2 gained to nearly 60% of the total cost, due to the influence of the reduction in working hours from 8 to 7 and increases in wage rates. Indiana, however, which in 1934 mechanically loaded 61.4% of its output (a gain of 12.8% over 1933) even reduced its proportionate cost chargeable to labor from 54.31% to 53.73% in its deep mines. Illinois, another highly mechanized section, also showed a slight reduction in labor cost ratio to total cost, but its ratio is nearly 60% of total cost. All the other areas covered above reflect an increase in percentage relationship to total cost after the 7-hour day went into effect. The stripping mines of Indiana and Illinois are particularly noticeable in the above table, for

Percentage which Each Cost is of the Total Operating Cost in Bituminous Coal Mining for Selected Areas during Period April 1934 — January 1935.



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their radically lower ratio of labor to total cost. This type of mining, largely with powerful steam shovels, is of course highly mechanized, with a comparatively low per ton labor cost.

Mining Supplies: In the Subdivisions of Division I, supplies cost ran generally between 12% and 15% of the total cost. In the deep mines of Division II, Indiana and Illinois, however, this cost bore from 16% to 20% of total cost, while in Alabama (the largest part of Division III) it averaged around 16% to 17%. The cost of supplies is controlled by necessity and is, of course, variable both from month to month in any mine and from mine to mine as well as from district to district. Physical mining and safety requirements vary, and costs of principal supply items vary with distance from the source.

Miscellaneous and Fixed Charges: This item is made up of two classes of charges that vary from month to month quite differently. They are (1) the cost of "fixed charges usually on a lump sum basis", normally varying only slightly from month to month in amount, but as output per month increases, the per ton cost decreases. General supervisory salaries, rent, taxes, insurance, depreciation, etc., are ordinarily on a monthly basis and vary in cost per ton as the output varies. (2) The group of fixed charges composed of "fixed charges usually on a per ton basis", which, of course, vary in amount depending on production, consist principally of royalties and depletion. The combination of all these over - head items constituted a variable proportion of total costs, running generally from 14 to 20 per cent.

Production Cost: This term has been used throughout the N.R.A. cost studies as representing the total of the cost charges involved in producing only, exclusive of sales and general administrative expenses. For the deep mine operations, this producing cost averaged in the Subdivisions of Divisions I and II slightly under and slightly over 90 per cent of total cost, Western Pennsylvania Subdivision I showing 93.44 per cent with others ranging lower - Northern West Virginia averaging 88.15 per cent of total cost.

Selling and Administrative Expenses: Generally speaking these items averaged around 10 per cent of total cost, with the Northern Subdivisions running under 10 per cent, and Western Pennsylvania averaging as low as 6.56 per cent. The Southern Subdivisions averaged slightly over 10 per cent. Since these expenses are frequently the subject of critical analysis, especially the administrative costs which include salaries of executives, a brief statement of the cost in cents per ton will be here undertaken.

Selling and Administrative Costs, Average in Cents Per Ton for Selected Areas in Divisions I, II and III, Composite for 10 Months April 1934 through January 1935

	Selling Expense (*)		Administrative Expense (*)	
	Cents Per Ton	% of Total Cost	Cents Per Ton	% of Total Cost
Eastern Pa. (excluding Md. and Upper Potomac)	10.69	5.04	7.94	3.74
Western Pennsylvania	6.29	3.24	6.96	3.59
Ohio	11.34	6.29	3.91	2.17
Northern West Virginia	13.45	8.07	7.09	4.25
Southern No. 1	14.06	7.22	5.71	2.93
Southern No. 2	13.68	7.52	5.66	3.11
Indiana - deep	10.42	6.49	5.17	3.22
Indiana - strip	11.43	6.30	7.83	5.68
Illinois - deep	9.72	6.01	6.94	4.29
Illinois - strip	9.91	7.86	9.31	7.39
Alabama	9.20	3.96	11.47	4.95
Division I - North	9.46	4.90	6.79	3.52
Division I - South	13.32	7.34	5.74	3.05
Division I as a whole	11.68	6.13	6.25	3.28
Division II - deep (Ind. & Ill.)	9.87	6.10	6.58	4.07
-strip	10.53	8.05	8.71	6.65
Divisions I, II, III combined	11.29	6.12	6.54	3.65

(*) Source: "Bituminous Coal Statistics April 1934 through January 1935", pp. 8 and 9; files of N.R.A. Bituminous Coal Unit; except Indiana, Illinois, Division II, deep and strip segregated costs which were computed from the unpublished data in same files.

The comparatively lower selling cost average for Western Pennsylvania stands out. Undoubtedly the presence in that Subdivision of the country's largest operating company with wide ramifications through subsidiary distributing corporations exercises a downward influence on the average selling cost per ton. It is quite possible that discretionary allocations of selling costs were made to subsidiary corporations, such as lake docks. This Subdivision also is in the heart of the by-product and steel district, with heavy-volume consumers.

Other subdivisions average around 9 to 14 cents per ton for selling, Division I - North averaging 9.46 cents and Division I - South 13.82 cents per ton, with 11.68 average for the Division as a whole. Selling expense for Division II is slightly under that for Division I, the average amounts being 10 and 11.68 cents per ton respectively.

On the other hand, administrative expense per ton generally averages higher in those subdivisions having lower selling costs than in those with the higher selling costs (Western Pennsylvania again being an exception), running from about 5 to 8 cents, with Alabama almost 11½ cents.

In dealing with selling and administrative expenses, several facts should be remembered. Not always do company accounts accurately segregate the real selling costs; principal administrative officers often do a large part of the selling, especially to the important customers. Specialization upon or exceptionally good access to large-volume consumers as against dependence upon a larger number of customers whose average business is small in volume, with commensurately greater expense of selling per ton; or a wide expanse of territory covered in selling as against the more fortunate situation, even with the same number and size of customers, congregated in a comparatively small area; or a group of comparatively small mines contributing to the average as against larger average size mines in another subdivision, with the effect generally of a larger cost of selling per ton in the former area; difference in policy as to size of commissions paid or channels of distribution utilized -- these and other factors largely unrevealed in the N.R.A. cost reports may reasonably account for variations in selling expense, and to a lesser extent administrative expense.

Generally speaking, the combined selling and administrative cost in cents per ton, as reported from month to month, ran from 15 to 20 cents, the 10-month average for Division I being 17.9 cents per ton, 9.4% of total cost; Division II 17.1 cents per ton, 11.1% of total cost; and Divisions I, II and III combined, 17.8 cents per ton, 9.8% of total cost.

E. Average Costs, by N.R.A. Code Divisions.

Monthly averages are presented in this chapter in tabular form, with illustrative charts for the principal Subdivisions and Divisions. The charts and tables show the following items:

Labor Cost
Supplies
Miscellaneous and Fixed Charges
Production Cost (total of foregoing)
Selling and Administrative Expense
Total Costs
Average Number of Days Tipple Started

The number of reporting mines whose figures enter into the averages, and their total production in tons, also appear on the tables.

The reader will be able to trace average costs in any Division or Subdivision or field area within a Subdivision. For a more detailed breakdown of the costs themselves into sub-items, reference may be made to the published summaries in three volumes (November-December 1933; January-February-March 1934; April 1934 - January 1935), which are an appendix to this study.

1. Divisional Averages: An average cost figure for all the

mines operating within a Division must admittedly reveal only a very general picture. Nevertheless, in this industry such averages are very significant.

Division I, for instance, comprises all the bituminous coal fields east of Indiana (except Alabama*Georgia*Southern Tennessee) and include also Western Kentucky. This Division accounts for more than 72% of the entire United States production. It competes, generally speaking, for the business of the East, middle West and Northwest - in the East among its own neighbors, and elsewhere with Division II primarily. In any coordinated discussion of the industry, Division I fields usually are bracketed together. This is particularly true since the World War, though this large producing territory finds itself sub-divided by wage-scale differentials into two sections, called for convenience Division I North and Division I South.

In the Bituminous Coal Conservation Act of 1935, the districts formerly comprising Division I under the N.R.A. Code were combined with Indiana, Illinois and Iowa (N.R.A. Code Division II) to establish "Minimum Price Area Number 1". Prices fixed under this Act must show an average return "as nearly as may be" to the weighted average of the total costs per net ton on all "tonnage of such minimum price area". Clearly, Divisional averages during the Code period take on an added significance as forming a body of cost data comparable with those requisite as bases for price fixing under the Bituminous Coal Conservation Act of 1935. For purposes of future comparison, therefore, a statement will follow the discussion of Divisions I and II, presenting the combined averages of these Divisions.

2. Two Distinct Periods Under Code: The N.R.A. Code period naturally divides itself into two parts: (1) The 8-hour day and 40-hour week period through March 1934; and (2) the 7-hour day and 35-hour week period beginning April 1, 1934, and running through to the termination of the N.R.A. Code May 27, 1935.

Bituminous Coal was the first industry in history to adopt a nation-wide 7-hour day. (See Chapter IV-(b) on Wages and Hours.)

Cost statements on Forms A and B were required by N.R.A. beginning with November 1933, so that summaries are available for the five months ending in March 1934 (the 8-hour day period), and for the ten months starting with April 1934 through January 1935, (in the 7-hour day period) when monthly reporting ceased.

The proportionate relationships of the cost items shown during the first 5-month period were fairly constant from month to month in the divisional averages. Although in the different months the averages were not always based on reports of identical mines, nevertheless the representation in tonnage is so large as to be fairly conclusive of broad indications. For instance, average production costs show a variation approximately indicative of the effect of a variable number of days worked.

It should be borne in mind that average costs as between any two Divisions normally appear at different levels, due in varying degrees to typical geological conditions, expanse and population density of marketing territory, wages and other labor factors, etc. For instance,

in Divisions I and II, the cost of selling generally is likely to be less per ton than in Divisions IV and V, due to a more congested market; labor costs average less in Division II than in either Division IV or Division I, due partly to the heavy weighting of stripping operations and partly to favorable operating conditions; in Division V the costs appear higher than in Divisions I or II because of average higher wage scales, higher selling costs - a more scattered market, and longer transportation with higher freight costs on equipment and supplies.

The Divisions compare as follows for the two N.R.A. Code Periods:

	Mine Labor	Mine Supplies	Misc. & Fixed Chgs.	Selling & Adm.	Total Cost
Division I	$Per ton	$Per ton	$Per ton	$Per ton	$Per ton
Nov. 1933-Mar. 1934	.9427	.2168	.2872	.1522	1.5989
Apr. 1934-Jan. 1935	1.1519	.2575	.3171	.1793	1.9058
Division II					
Nov. 1933-Mar. 1934	.7299	.2471	.2311	.1372	1.3453
Apr. 1934-Jan. 1935	.8291	.2944	.2504	.1709	1.5448
Division III					
Nov. 1933-Mar. 1934	1.1218	.3077	.3189	.1999	1.9483
Apr. 1934-Jan. 1935	1.4130	.3658	.3131	.2064	2.2983
Division IV					
Nov. 1933-Mar. 1934	.8011	.3297	.4106	.2296	1.7710
Apr. 1934-Jan. 1935	(a)	(a)	(a)	(a)	(a)
Division V					
Nov. 1933-Mar. 1934	1.0758	.3111	.4122	.2423	2.0414
Apr. 1934-Jan. 1935	(a)	(a)	(a)	(a)	(a)

(a) Not available

3. Division I: Average Costs - (In 1934 produced 72.77% of the U.S. total, according to U. S. Bureau of Mines preliminary estimate)

For Division I, labor cost averaged nearly 59% of total costs during the 5-month period when the 8-hour day was in effect, and in the second period under 7-hour day averaged nearly 60½ per cent of total costs.

The number of days worked is a heavy factor in costs per ton, Labor paid on a day and hour basis obviously will vary in cost per ton depending on tons produced; shorter working time will reduce the production, but often day workers will work full time in unproductive or low production days. Tonnage men, on the other hand, will, given the same proportions of men working at the respective rates in two different periods, show very nearly

the same average cost per ton for their labor while the wage rate remains unchanged. Yardage and deadwork will also more or less average out in a composite representing a large number of mines, although in individual mines the cost per ton may vary widely between one month and another. Mine Supervisory and Clerical expense is likely to run more or less the same in total amount from month to month, varying per ton according to the days the mine worked and the tons produced.

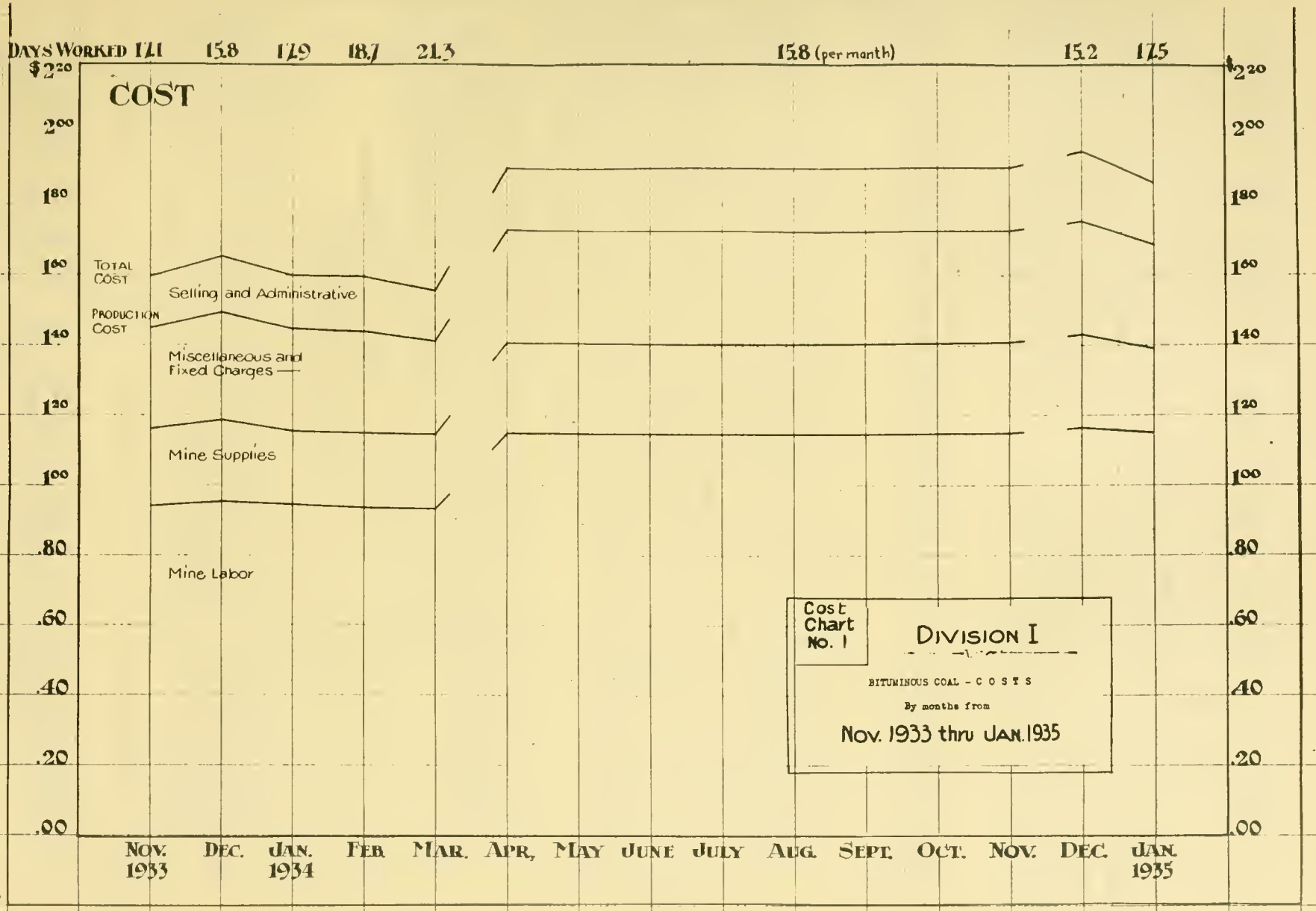
Total Labor Costs, averaged for all of Division I, reflect the monthly changes in working time only to a slight degree, but comparatively narrow variations in each of the cost groups comprising production costs (labor, supplies, miscellaneous and fixed charges) combine to illustrate quite clearly the effect of variable working time. The November 1933 production cost, $1.4319 in a 17.1 day month, rose in December to $1.4934 as days worked fell to 15.9; and by March had fallen back to $1.4123 when the average number of days tipples started rose to 21.3, a very good month.

It is not intended to attribute the entire variation to working days, but undoubtedly in the averages this is the largest direct-effect factor. Nearly all other factors appear at irregular times in reports of individual companies, but the working time factor is likely to appear in the vast majority of mines and affect the cost of a vast bulk of tonnage all in the same month.

It is unfortunate that two Southern Subdivisions of Division I (Southern No. 1 and Southern No. 2) reported for the 8-month period April-November 1934 in one statement, which necessitates showing the Division I Summary in that manner. The 10-month average cost for this period indicates the increase in labor cost to have averaged 20.92 cents per ton under Code Amendment 1 as compared with the earlier period. Other costs increased also, namely Supplies 4.07 cents, Miscellaneous and Fixed Charges 2.99 cents, for a total increase in Production Cost of 27.98 cents per ton. Selling and Administrative expense increased 2.71 cents, resulting in Total Cost increase during this 10-month period of 30.69 cents.

	5-Month Period Nov. 1933 through March 1934 (8-hour day)	10-Month Period April 1934 through January 1935 (7-hour day)	Increase
	Per ton	Per ton	Per ton
Mine labor	$0.9427	$1.1519	$0.2092
Mine Supplies	.2168	.2575	.0407
Miscellaneous & Fixed Charges	.2872	.3171	.0299
Production Cost	1.4467	1.7265	.2798
Selling and Administration	.1522	.1793	.0271
Total Cost	$ 1.5989	$ 1.9058	$ .3069

Not all of this increase is directly due to the increased wage scale and reduction of maximum hours to 7 a day, 35 a week. The cost of supplies was also increasing; and the factor of working days had a decided influence. The simple average of the working days in the 8-hour day period, would be


DAYS WORKED 17.1 15.8 17.9 18.7 21.3 15.8 (per month) 15.2 17.5
COST
$2.20
2.00
1.80
1.60
1.40
1.20
1.00
.80
.60
.40
.20
.00
TOTAL COST
Selling and Administrative
PRODUCTION COST
Miscellaneous and Fixed Charges
Mine Supplies
Mine Labor
Cost Chart No. 1
DIVISION I
BITUMINOUS COAL - COSTS
By months from
Nov. 1933 thru JAN. 1935
NOV. 1933
DEC.
JAN. 1934
FEB.
MAR.
APR,
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN. 1935

18.2 per month for the five months; in the 7-hour day period, it would be 15.8 per month (15.7 for the 8-months composite from April through November). This reduction in working time operated as a direct influence to increase costs per ton. It is to be expected that ordinarily a period of months which includes April to August or September will reflect the relatively lower summer rate of production. During this 1934 stretch, April was affected adversely by certain interruptions due to the new schedule of hours and wages - some attributable to the operators and some to labor (see more detailed discussion in Chapter IV). In no succeeding month did the average working days equal the 18.2 average of the initial 5-month period, and the averages for November, December and January failed to reach the time worked in 1933 by 2.1 days in November, 1.7 in December, and .7 a day in January.

The comparative influence of working time, of labor cost increase, and of other increases known to have taken place, such as cost of supplies, etc., is not discernible or capable of segregation in the reports as submitted.

In the 5-month period, an average of 863 mines reported a total production of 79,072,000 tons, or 869,879 per day, an average per mine per day of 1,008 tons. In the 10-month period, an average of 793 mines reported a total production of 138,309,000 tons, or 876,483 per day, an average per mine per day of 1,105 tons. This indicates a substantially different sample of mines in the two periods; the resulting average costs in both periods rest upon the composition by Subdivisions, which will later be examined. (*) The significance of these comparative rates of production is also tied up with a consideration of the number of additional men employed, the greater number of working places operated, the number of loading machines added to offset the effect of reduced hours per day. Data on these points are not available.

Before leaving the Divisional discussion, the two major sections of Division I should be considered, since those producing areas north of the Ohio and Potomac Rivers (including also Northern West Virginia), known as Division I - North, operated on a higher basic wage scale than did those south thereof, known as Division I - South.

4. Division I - North - (In 1934 produced 38.02% of the total U. S. production, according to preliminary estimate of U. S. Bureau of Mines)

This is the Section of Division I for which the N.R.A. Code established basic minimum wage rates for inside skilled labor of $4.60 per 8-hour day ($4.36 in Northern West Virginia), as against $4.20 per 8-hour day in Division I - South; and for which Amendment 1 established a day rate of $5.00 beginning April 1, 1934, as against $4.60 in the South.

Reference to the table indicates that the first 5 month period, under

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(*) Relative weight of each Subdivision appears in table "Approximate Representation of Tonnage Shown in Statistical Summaries", for reference to which see earlier in this Chapter, page 422.

the 8-hour day, resulted in an average labor cost of 97.35 cents per [illegible], while the 7-hour day of higher scale increased by 21.23 cents to $1.1858 per ton in the 10 months following. Supplies in the second period were up 4.46 cents; miscellaneous and fixed charges 3.9 cents; selling and administration 3.09 cents; a total increase of 32.68 cents per ton from $1.6035 to $1.[illegible]6. Thus, increased labor costs accounted for 65% of the increased cost, although, as indicated in the discussion of Division I costs just above, not all of this increase in labor cost can be attributed to the increase in wage scale and reduced working hours. The average monthly working time in the 10-month period was only 15.19 days per month as against 18.2 days in the early period.

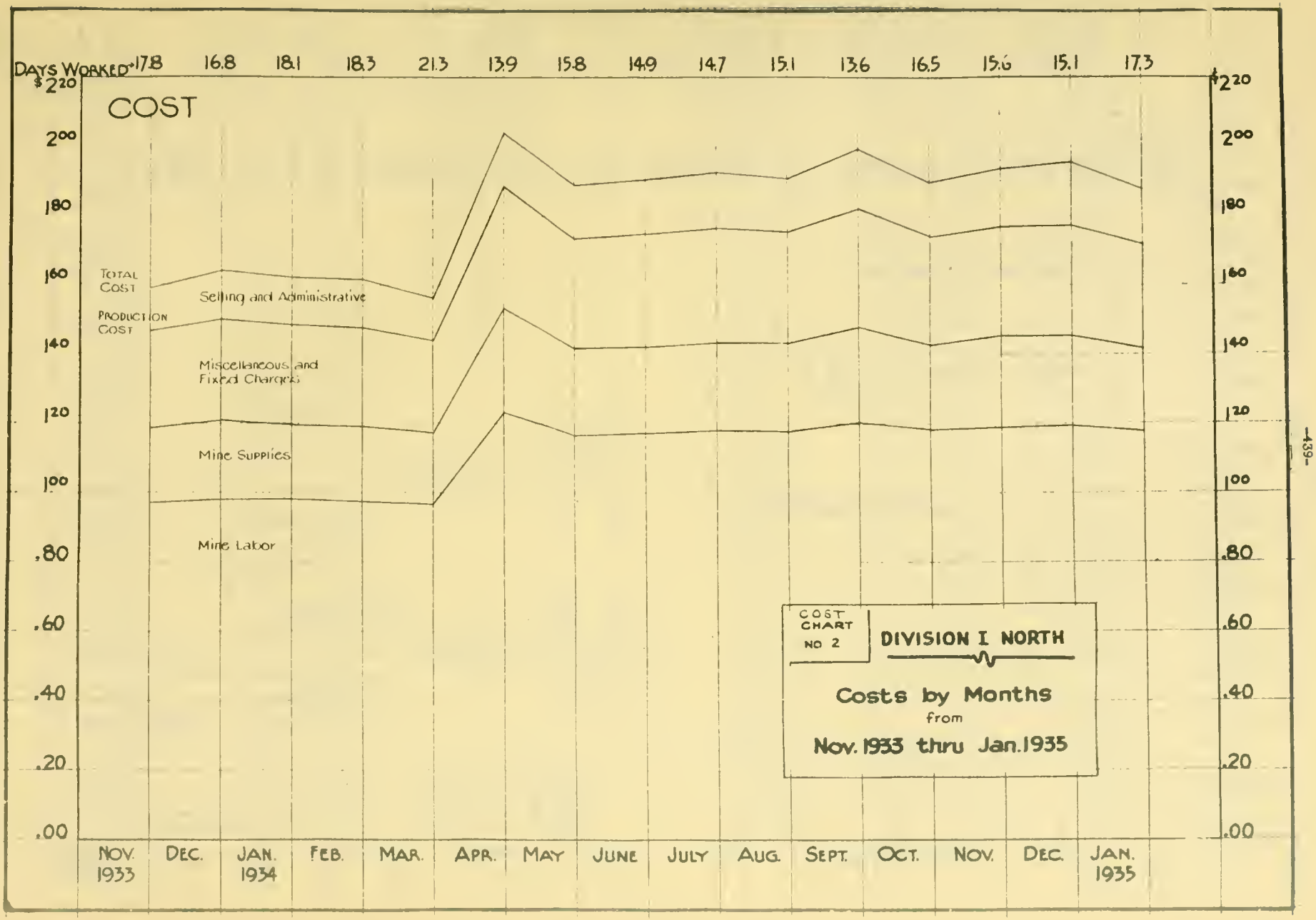
It is interesting to compare the output per mine per working day in the two periods. Under the 8-hour day, the 433 mines reporting showed an average of 1040 tons a day per mine, while during the 7-hour day period, 408 mines reported an average daily output of 1095 tons per mine. Again, data to place the responsibility for the faster output are lacking, but it undoubtedly lies in a combination of more men, more working places, more mechanical equipment.

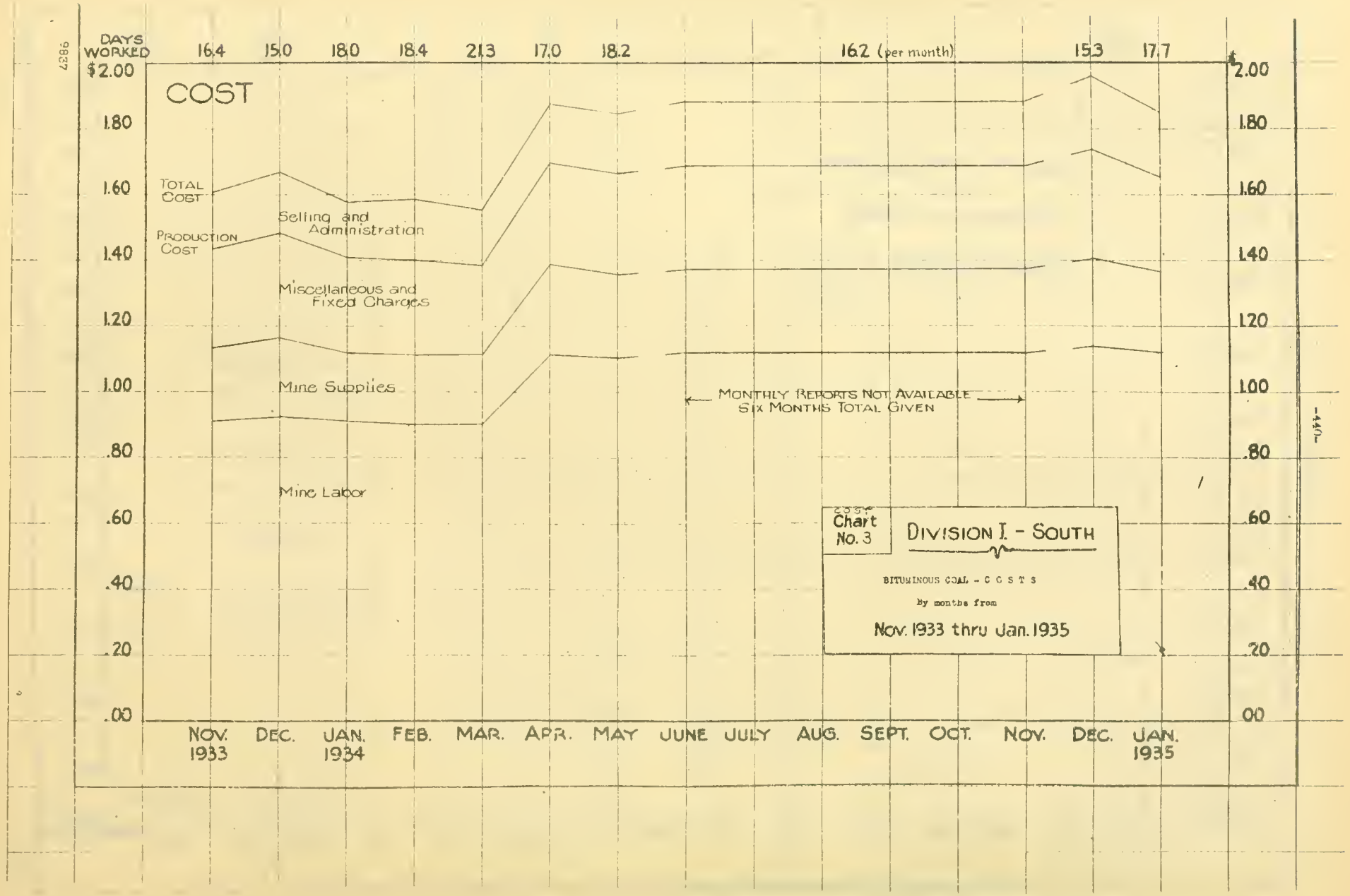
At the time of the adoption of Amendment No. 1, operators estimated that the new hours and wage scale and other rising costs meant an average increased cost of about 25 cents per ton.

5. Division I - South - (In 1934 produced 34.75% of the U. S. total, according to preliminary estimates of the U. S. Bureau of Mines)

Average labor costs in the South were lower than in the North by 6.39 cents per ton in the early Code period, and 6.67 cents in the latter period. The total costs in the two sections were very nearly the same in the first period, mainly due to higher average selling and administrative expenses reported in the South. In the second period, however, although both sections showed very similar increase in labor cost, the North reported greater average increases in the other items, which results in an average total cost of $1.9296 for the North and $1.8829 for the South, a difference of 4.67 cents per ton in favor of the South.

The (simple) average monthly working time was only 16.4 days in the second period as against 18.2 days in the earlier period. It may be noted here that the South shows relatively better working time throughout the usual "slack" months of the year than does the North largely because of the steadily maintained production of the smokeless coals in Southern Subdivision No. 1 (see later discussion of this Subdivisions' costs in detail).


DAYS WORKED 17.8 16.8 18.1 18.3 21.3 13.9 15.8 14.9 14.7 15.1 13.6 16.5 15.6 15.1 17.3
COST
$2.20
2.00
1.80
1.60
1.40
1.20
1.00
.80
.60
.40
.20
.00
TOTAL COST
PRODUCTION COST
Selling and Administrative
Miscellaneous and Fixed Charges
Mine Supplies
Mine Labor
NOV. 1933
DEC.
JAN. 1934
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN. 1935
COST CHART NO 2
DIVISION I NORTH
Costs by Months
from
Nov. 1933 thru Jan. 1935


9837
DAYS WORKED
16.4
15.0
18.0
18.4
21.3
17.0
18.2
16.2 (per month)
15.3
17.7
$2.00
1.80
1.60
1.40
1.20
1.00
.80
.60
.40
.20
.00
COST
TOTAL COST
PRODUCTION COST
Selling and Administration
Miscellaneous and Fixed Charges
Mine Supplies
Mine Labor
MONTHLY REPORTS NOT AVAILABLE
SIX MONTHS TOTAL GIVEN
2534
Chart No. 3
DIVISION I. - SOUTH
BITUMINOUS COAL - C O S T S
By months from
Nov. 1933 thru Jan. 1935
NOV. 1933
DEC.
JAN. 1934
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN. 1935
-440-

6. Division II (In 1934 accounted for 16.48% of the U. S. total production, according to preliminary estimates of U. S. Bureau of Mines)

In Indiana and Illinois a substantial part of the output is produced by stripping operations. In 1933, of the total Indiana output 36.8% was from strip mines, and in Illinois 15%. (*) The influence of these lower-cost stripping operations on average costs is decidedly downward. Deep and strip mines all compete for the same business.

The lower strip mines costs are, however, not entirely responsible for the lower average costs in Division II as against Division I. A combination of circumstances, including (1) better seams on the average; (2) the use of a higher proportion of workers on a day basis than in Division I; (3) a much higher percentage of total production loaded mechanically than in Division I; all weigh heavily in the lower average of deep mining costs in Division II.

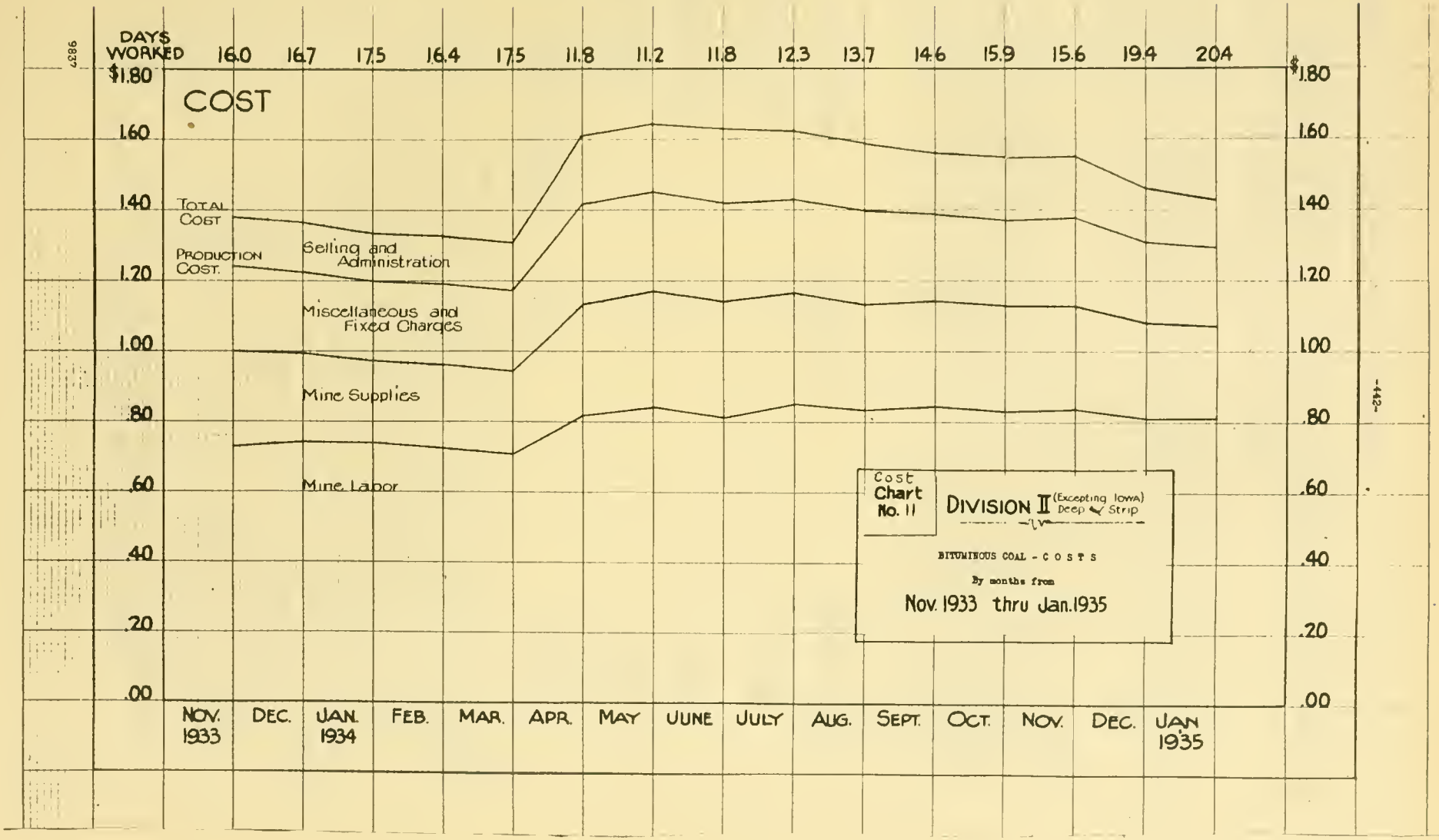
For the Division as a whole, including both deep and strip mines, the figures disclose the combined influence of the 7-hour day, new wage scale, and other increasing costs, in the two N.R.A. Code periods, intensified by a number of days worked monthly averaging 16.8 in the first period and only 14.6 in the second period:

	5 Months November 1933 through March 1934	10 Months April 1934 through January 1935	Increase
	Per ton	Per ton	Per ton
Mine Labor	$ .7299	$ .8291	$ .0992
Mine Supplies	.2471	.2944	.0473
Miscellaneous & Fixed Charges	.2311	.2504	.0193
Production Cost	$ 1.2081	$ 1.3739	$ .1658
Selling & Administration	.1372	.1709	.0337
Total Cost	$ 1.3453	$ 1.5448	$ .1995

Note from the ensuing analysis of the averages for the Division II Deep mines and the Division's Strip mines that the influence of the Deep mine group in the Division averages was comparatively heavier in the 8-hour day period than in the second or 7-hour day period. Thus the average total costs of the Deep mines during the 10-months of the 7-hour day was $1.6157, an increase of $.1987; the Strip mine figure ($1.3088) was an increase of $.2198, resulting in a combined Deep and Strip average increase of $.1995.

Note also that in Division II, Amendment 1 on April 1, 1934, effected a change only in the maximum hours - the basic rates per day remained unchanged, so that the increased labor cost resulting from Amendment 1 was due mostly to the change in the working day, by contrast with Division I

(*) U. S. Bureau of Mines, "Coal in 1933, Detailed Statistics", p. 302.


9827
DAYS WORKED
16.0 16.7 17.5 16.4 17.5 11.8 11.2 11.8 12.3 13.7 14.6 15.9 15.6 19.4 20.4
COST
$1.80
1.60
1.40
1.20
1.00
.80
.60
.40
.20
.00
TOTAL COST
PRODUCTION COST
Selling and Administration
Miscellaneous and Fixed Charges
Mine Supplies
Mine Labor
NOV. 1933
DEC.
JAN. 1934
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN 1935
Cost Chart No. 11
DIVISION II (Excepting Iowa) Deep & Strip
BITUMINOUS COAL - COSTS
By months from
Nov. 1933 thru Jan. 1935
-442-

where the hours and basic scale were both changed at this time. (*)

The average output per mine per day was 1,575 tons in the 8-hour day period, but increased to about 1,610 under the 7-hour day; the first figure is the aggregate of 170 mines, while the second is for only 149 mines, however, a substantially different sample.

The Deep Mines composed 78.13 per cent of the total production of the reporting mines during the initial 5-month period, or 17,538,000 out of 22,447,000 tons. In the succeeding 10 months, a shorter work-week period, the reporting deep mines composed 76.9 per cent, or 27,035,000 out of 35,155,000 tons.

In the earlier period, the (simple) average of days worked per month was 17; in the second period only 14.6 days, due to the smaller number of working days per month in the spring and summer. The total days worked per mine for the three-month period beginning November 1933 was 51.1 and for the same three months in the 1934 period was 55.6 days. A month-by-month comparison of costs for these 3 winter months discloses the following:

Division II Deep Mines	Average Days Worked	Average Total Cost per Ton
November 1933	16.3	$ 1.4490
November 1934	15.5	1.6103
December 1933	17.0	1.4337
December 1934	19.5	1.5327
January 1934	17.8	1.4099
January 1935	20.6	1.4897
1933 - Total 3 Months	51.1	$ 1.4299
1934 - Total 3 Months	55.6	$ 1.5374

While it is fairer to compare like seasons to measure the 8-hour day costs with those under the 7-hour day, there is the factor of different numbers of days worked, which in this case operates to offset some of the increase in costs. The bare fact is that in these three seasonally comparable months the cost increase shown is $.1075; but the actual increase would unquestionably show as somewhat more than that, if the working time in the two winter periods had been the same. By projecting the ascertained average one-day cost, by items, in the same manner as described in section C-1 of this chapter, the average increase in cost may be approximated for the three months, November 1934 - January 1935, over November 1933 - January 1934, had the reporting mines worked 55.7 days in both periods. The projected cost would then compare with the November 1934 - January 1935 actual averages as follows:

(*) See Schedule A of the Code and revisions of Schedule A in Amendments 1, 2, 3, N.R.A. Bituminous Coal Unit files, "Code".

Division II Deep Mines	Average Days Worked	Average Production Cost Projected for Nov. 1933-Jan.1934	Actual Nov.1934-Jan. 35
November	15.6	$1.3362	$1.4600
December	19.6	1.2610	1.3844
January	20.5	1.2396	1.3553
Total 3 Months	55.7	$1.2733	$1.3938

Thus by projection it appears that the adoption of the 7-hour day, 35-hour week, with increased/hour-rates, on April 1, 1934, resulted in an average increase in production cost of about $.1205 per ton for the reporting deep mines of Division II (excluding Iowa) on a comparable basis of days worked during these three winter months.

The Strip Mines of Division II, exclusive of Iowa, showed average total costs during these same two comparable periods as follows:

Division II Strip Mines	Average Days Worked	Average Total Cost per Ton
November 1933	14.7	$1.1419
November 1934	16.0	1.2790
December 1933	16.0	1.1213
December 1934	19.1	1.2068
January 1934	16.4	1.0796
January 1935	19.9	1.2226
1933 - Total 3 Months	47.1	$1.1131
1934 - Total 3 Months	55.0	$1.2337

To approximate the actual effect of the 7-hour day and accompanying increase in wage scale in April 1934, a projection has been made similar to that used for the deep mines just discussed above, which produces the following comparison of average costs in the 3 winter months of 1933 with those of 1934 on the basis of the same number of working days:

Division II Strip Mines	Average Days Worked	Average Production Cost Projected for Nov.1933-Jan.1934	Actual Nov.1934-Jan.1935
November	15.9	$ .9370	$1.1029
December	19.0	.8695	1.0248
January	19.8	.8202	1.0551
Total 3 Months	54.7	$ .8717	$1.0586

The approximate average increase in production cost per ton, on the basis of comparable working days during these 3 winter months thus was $.1869 per ton for this group of reporting strip mines.

[illegible] mines entering into the averages showed an output per mine per day of 1790 tons in the 5 months under the 8-hour day, but increased to 1,975 tons under the 10 months of the 7-hour day. There were 34 reporting mines in the former figure and 52 in the latter. No competent accounting for the improved rate of production is available.

7. Divisions I and II Combined: This combined area includes the producing fields of Iowa, Illinois, Indiana, Kentucky, Ohio, Michigan, West Virginia, Northern Tennessee, Virginia, Maryland and Pennsylvania. In 1934, the production of these Divisions constituted 89.25 per cent of the total United States output, or 319,884,000 out of 358,395,000 tons, according to the preliminary estimate of the U. S. Bureau of Mines.

The significance of these combined averages lies in the fact that this area is identical with minimum price area number 1 under the Bituminous Coal Conservation Act of 1935. Prices as fixed under this Act must be coordinated and averaged in realization "as near as may be" to the average cost of all the producing fields embraced in the minimum price area.(*) (No chart is available for Divisions I and II combined; one is attached, however, covering Divisions I, II and III combined).

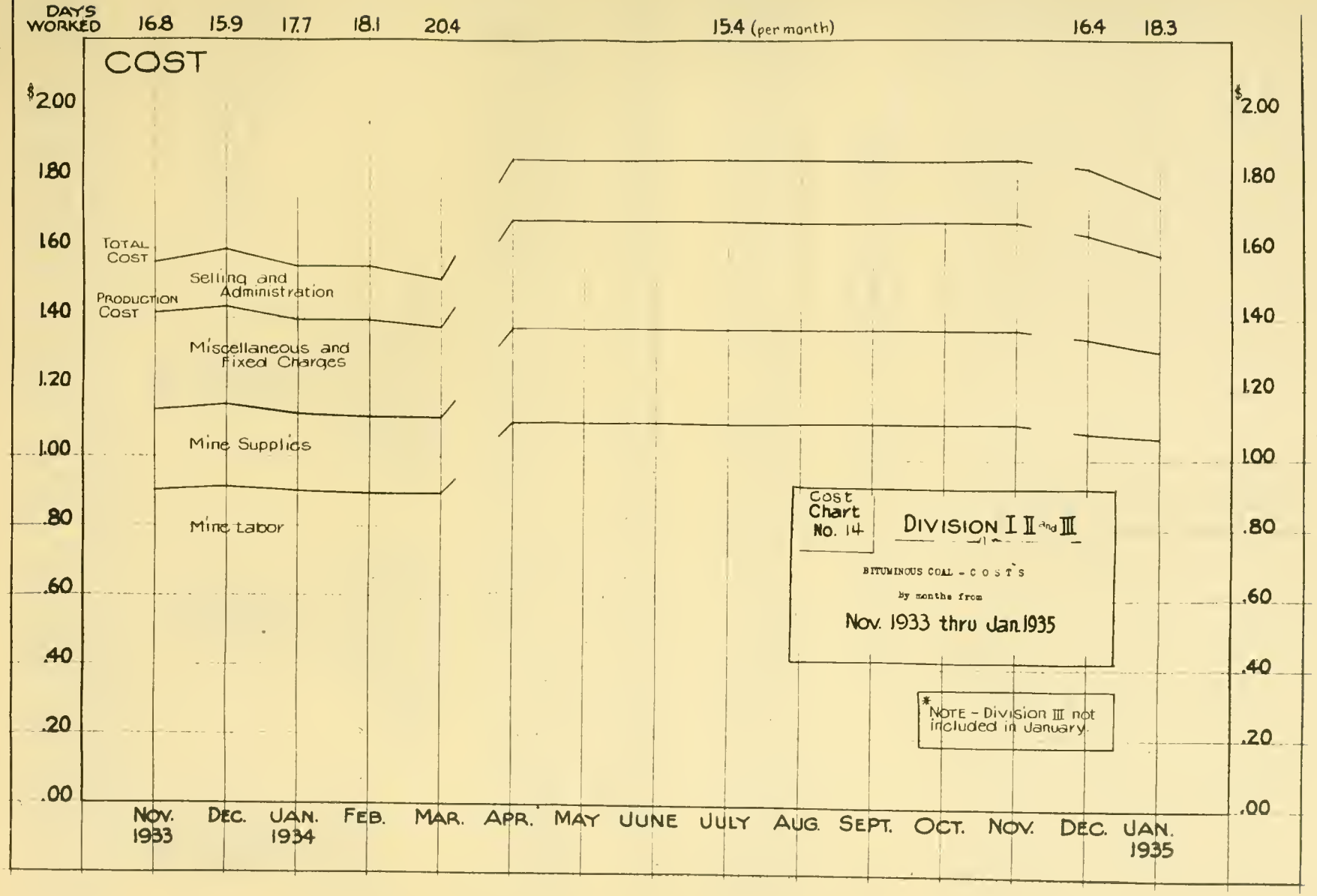
A comparison of the average costs for the 3 winter months beginning in Nov. 1933, with the same months beginning November 1934, is not possible because of the form in which Southern Subdivisions I and 2 reported in the latter period, when only an 8-month average covering April through November, 1934, is available.

The composite averages of Divisions I and II are shown in the following table for the 5 months of the 8-hour day compared with the 10 months of the 7-hour day. For strict comparability, the deep mines alone are shown in one comparison and the deep and strip mining averages combined in another.

DIVISIONS I and II COMBINED
AVERAGE COSTS

	Deep Mines Only		Deep and Strip Mines Combined	
	5 Months Nov. 1933 - March 1934 8-Hour Day	10 Months April 1934- Jan. 1935 7-Hour Day	5 Months Nov.1933 - March 1934 8-Hour Day	10 Months April 1934- Jan. 1935 7-Hour Day
	Per Ton	Per Ton	Per Ton	Per Ton
Mine Labor	$.9233	$1.1177	$ .8956	$1.0861
Mine Supplies	.2215	.2613	.2235	.2650
Misc. & Fixed Chgs.	.2727	.3025	.2748	.3036
Production Cost	1.4175	1.6815	1.3939	1.6550
Selling & Adm. Exp.	.1484	.1769	.1489	.1777
Total Cost	$1.5659	$1.8584	$1.5428	$1.8327
No. Days [illegible]				
No. Days Tipple Started	89.4	155.1	88.9	156.1
No. of Mines	999	910	1033	942
Production (Thousands of tons)	96,610	165,344	101,519	173,464

(*) Bituminous Coal Conservation Act of 1935, Section 4, Part II, Subsection (a), N.R.A. Bituminous Coal Unit files.


DAYS WORKED
16.8
15.9
17.7
18.1
20.4
15.4 (per month)
16.4
18.3
COST
$2.00
1.80
1.60
1.40
1.20
1.00
.80
.60
.40
.20
.00
TOTAL COST
PRODUCTION COST
Selling and Administration
Miscellaneous and Fixed Charges
Mine Supplies
Mine Labor
NOV. 1933
DEC.
JAN. 1934
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN. 1935
Cost Chart No. 14
DIVISION I II and III
BITUMINOUS COAL - COSTS
By months from
Nov. 1933 thru Jan. 1935
*NOTE - Division III not included in January.

The Deep Mines: On a simple average basis, the mines reporting in the 8-hour day period averaged 17.9 working days per month, while during the 7-hour day period the reporting mines averaged only 15.5 days per month. The comparison of total costs between the two periods is not a fair measure of increase in cost, due to the direct factor of shorter average number of days worked in the second period. The increase as shown stands at 29.25 cents per ton. However, the influence of the summer months in reducing available working time destroys the period's comparability with the 5 winter months of the previous season. Based on projections of production cost for Division I and Division II separately, and applying the influence of the working-day weighted by tonnage indicates an average increase for Division I of about 22.83 cents, for Division II of about 14.53 cents, and for Divisions I and II combined of 20.35 cents per ton. Note that these figures represent projected production costs, and do not include the increase indicated for Selling and Administrative costs, which appears at 2.88 cents per ton without respect to the influence of working days. It is fair to say that the change in cost between the 8-hour day and the 7-hour day periods approximated 23 or 24 cents per ton for this entire area.

8. Division III (In 1934 produced 2.96% of the U. S. total, according to U. S. Bureau of Mines preliminary estimate.)

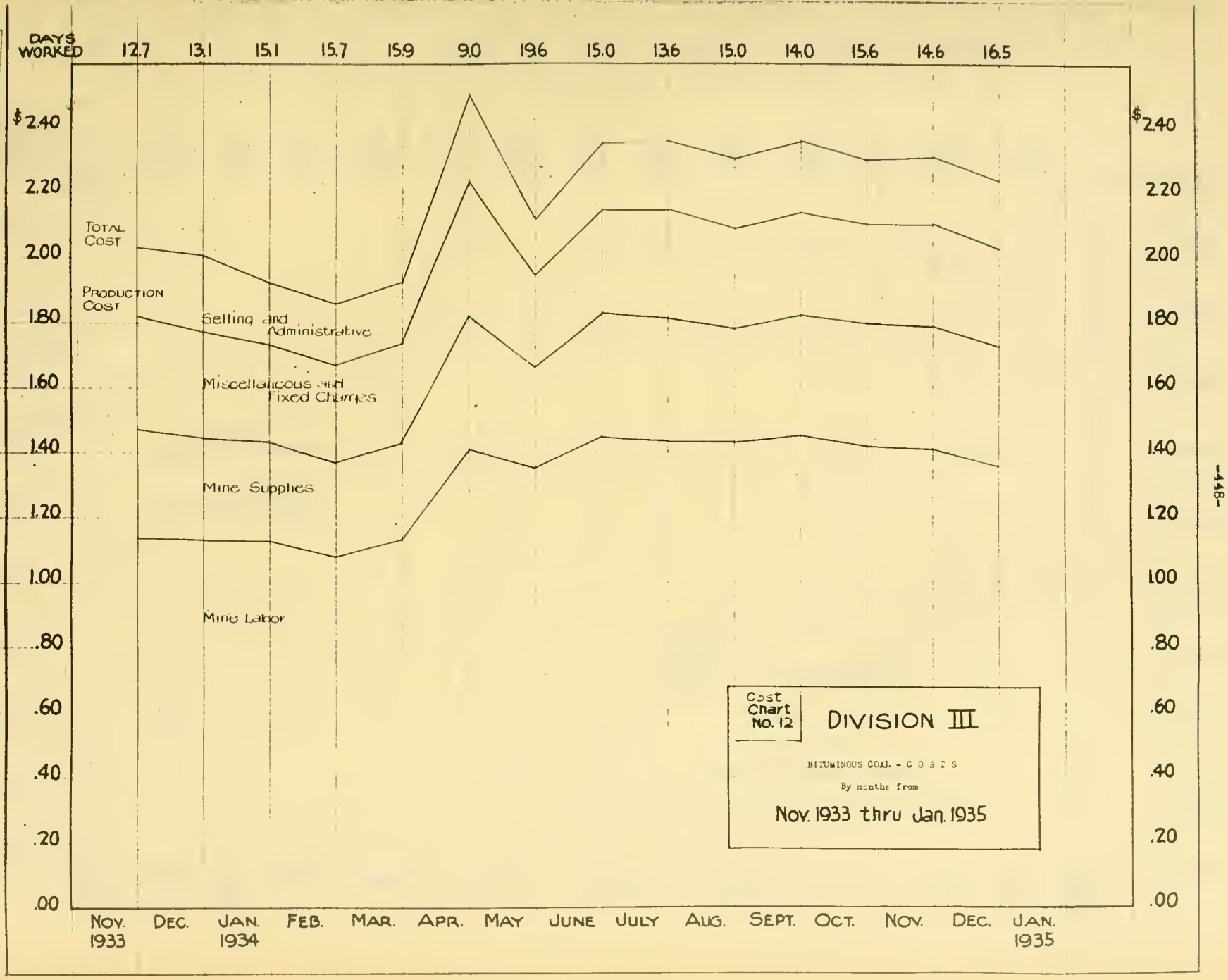
Division III (Alabama, Georgia and Southern Tennessee) was more materially affected by the 7-hour day than either Division I or Division II. Labor cost rose from 57.58% of total cost during the first or 8-hour day period to 61.48% in the 9 months after Amendment 1, and from $1.1218 to $1.4130, or 29.12 cents per ton.

In the first period the mines averaged 14.5 operating days per month and in the second period 14.6 days. Therefore the increase of 29.12 cents in labor cost may be said to be due to the 7-hour day and new wage scale.

The cost of supplies also averaged higher per ton in the second period, increasing from 30.77 to 36.58 cents, or 5.81 cents. Selling and Administrative was up from 19.99 to 20.64, or 65/100 cents per ton, but Fixed Charges were 58/100 cents less. The two periods compared as follows:

	5-Month Period Nov. 1933 through March 1934 (8-Hour Day)	10-Month Period April 1934 through January 1935 (7-Hour Day)	Increase
	Per Ton	Per Ton	Per Ton
Mine labor	$ 1.1218	$ 1.4130	$ .2912
Mine Supplies	.3077	.3658	.0581
Misc. and Fixed Charges	.3189	.3131	.0058
Production Cost	1.7484	2.0919	.3435
Selling & Administration	.1999	.2064	.0065
Total Cost	$ 1.9483	$ 2.2983	$ .3500

Average total costs in the second period were thus increased 35 cents per ton over the initial period, labor and supplies almost exactly accounting for it. The average output per mine per day under the 8-hour day was about 700 as against about 650 under the 7-hour day, with an average respectively of 47 and 50 mines contributing to the figures.


9837
DAYS WORKED
12.7
13.1
15.1
15.7
15.9
9.0
19.6
15.0
13.6
15.0
14.0
15.6
14.6
16.5
$2.40
2.20
2.00
1.80
1.60
1.40
1.20
1.00
.80
.60
.40
.20
.00
TOTAL COST
PRODUCTION COST
Selling and Administrative
Miscellaneous and Fixed Charges
Mine Supplies
Mine Labor
NOV. 1933
DEC.
JAN. 1934
FEB.
MAR.
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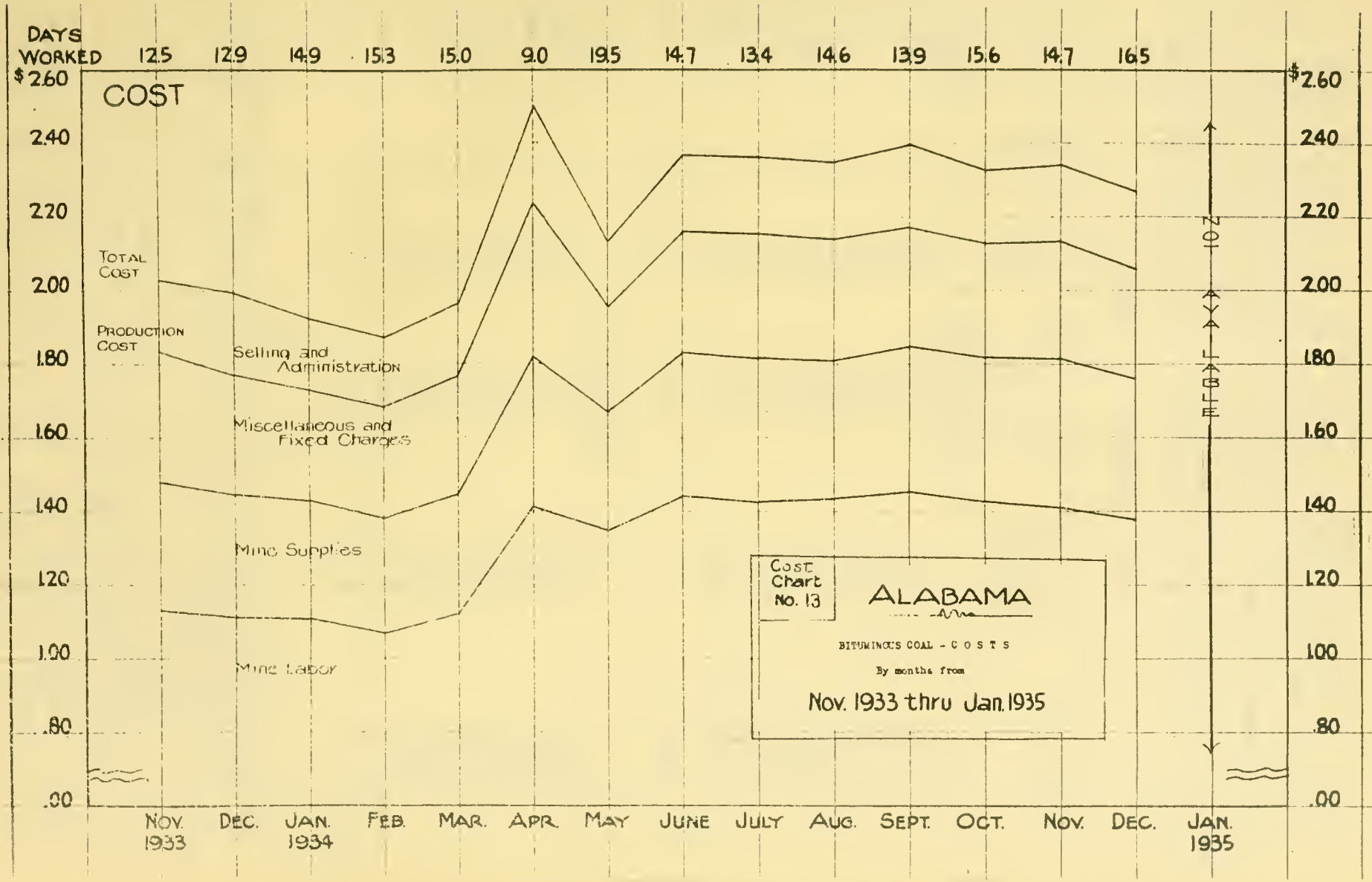
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN. 1935
Cost Chart No. 12
DIVISION III
BITUMINOUS COAL - C O S T S
By months from
Nov. 1933 thru Jan. 1935

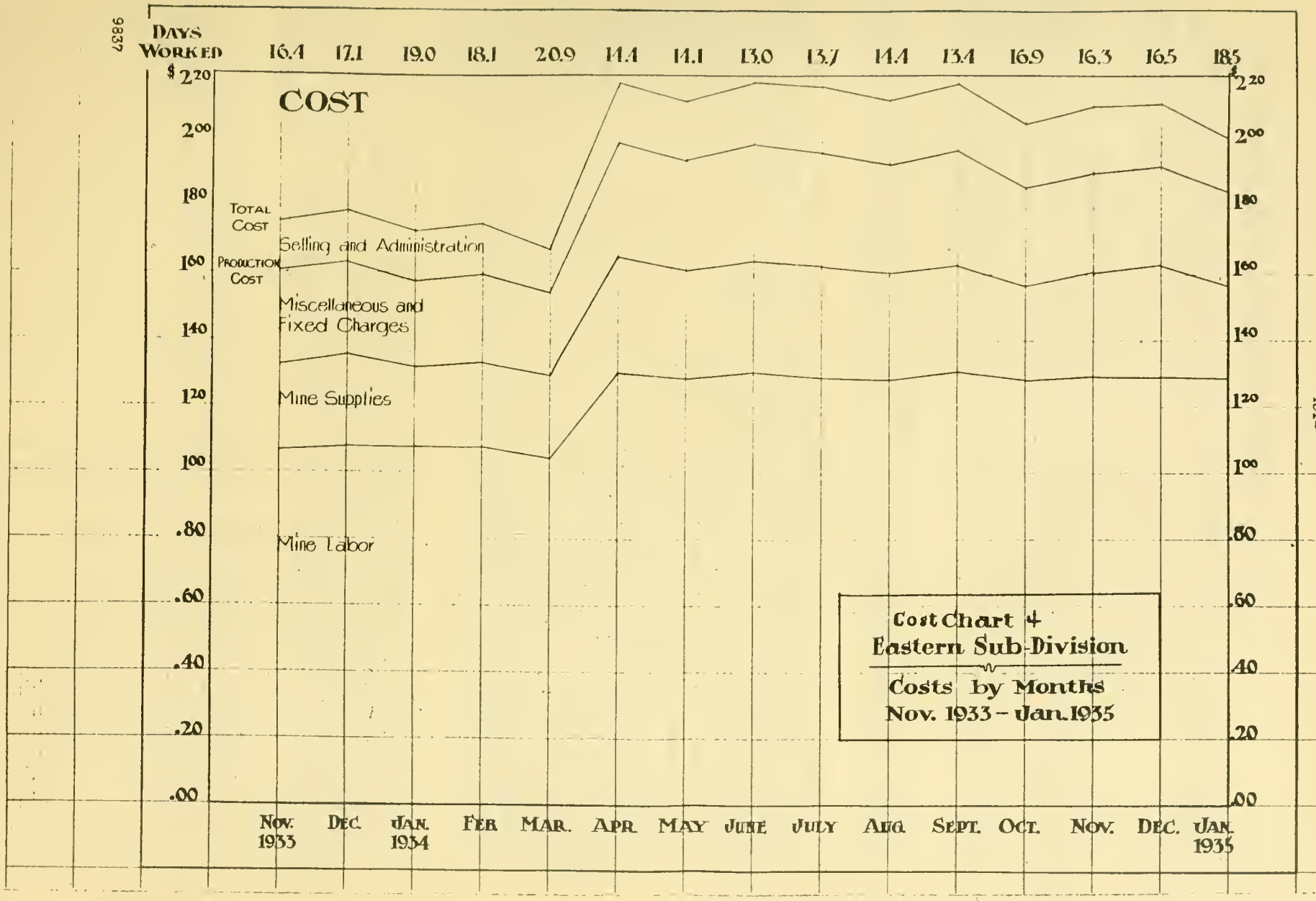

DAYS WORKED
12.5
12.9
14.9
15.3
15.0
9.0
19.5
14.7
13.4
14.6
13.9
15.6
14.7
16.5
COST
$2.60
2.40
2.20
2.00
1.80
1.60
1.40
1.20
1.00
.80
.00
TOTAL COST
PRODUCTION COST
Selling and Administration
Miscellaneous and Fixed Charges
Mine Supplies
Mine Labor
NOT AVAILABLE
Cost Chart No. 13
ALABAMA
BITUMINOUS COAL - C O S T S
By months from
Nov. 1933 thru Jan. 1935
NOV. 1933
DEC.
JAN. 1934
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN. 1935

The frequency tables show a group of mines in the lowest-cost interval consistently working fewer than the divisional average days (except in April 1934, which was a month of upset because of suspensions after the new wage scale and 7-hour day became effective). In fact, in the month of December 1934, the two lowest-cost groups worked 8 and 6 fewer days than the divisional average and fewer than any of the higher-cost groups. Using November 1933 and December 1934 for sample analyses, a brief recapitulation may be made as follows;

DIVISION III FREQUENCY TABLES

Cost Per Ton	No. of Mines	% of Total Tons	Avg. Output Per Mine Per Day (Tons)	Avg. No. of Tipple Starts	Avg. Cost Per Ton
			November 1933		
(under) $1.60	4	9.6	1,408	8.1	$ 1.557
1.60 - 1.70	3	12.0	1,015	13.8	1.655
1.70 - 1.80	7	13.1	591	15.2	1.744
1.80 - 1.90	7	12.1	481	17.2	1.865
1.90 - 2.00	6	17.1	880	15.5	1.933
2.00 - 2.20	4	5.7	510	13.5	2.105
2.20 - 2.30	2	3.4	1,067	7.7	2.244
2.30 - 2.40	3	5.1	592	13.6	2.355
2.40 - 2.50	3	8.5	1,006	8.1	2.434
2.50 & over	9	13.4	574	12.5	2.820
Total	50	100.0	752	12.7	$ 2.034
			December 1934		
$1.50 - 1.80	3	4.8	819	10.0	$ 1.681
1.80 - 1.90	5	10.6	990	11.4	1.855
1.90 - 2.00	5	22.1	1,321	17.7	1.968
2.00 - 2.10	3	5.6	488	20.0	2.032
2.10 - 2.20	7	15.9	659	13.2	2.151
2.20 - 2.30	4	6.3	431	19.9	2.218
2.30 - 2.40	4	6.0	463	17.1	2.355
2.40 - 2.50	4	8.2	549	19.7	2.458
2.50 & over	11	20.3	554	17.6	2.895
Total	46	100.0	697	16.5	$ 2.241

9. Divisions IV and V: Reporting of costs and realization from mines in the Southwest and Rocky Mountain Divisions did not continue into the 7-hour day period. No discussion, therefore, can be made as to comparative effect of Amendment 1 on average costs. Mining conditions in these Divisions do not make for as low-cost operations, in general, as are found in the Divisions to the east. Seams are, for the most part, much thinner and less continuous, faults and partings are more persistent, and deadwork is therefore much more of a factor in cost. The coals from these areas compete in a widely scattered market with fuel oils and natural gas from the Texas and Oklahoma Oil fields as well as with the lower-cost coals from other sections of the country, especially Division II. All of these adverse mining and marketing conditions are reflected in generally smaller mining operations and fewer average number of days worked per month.


DAYS WORKED
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COST
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2.00
1.80
1.60
1.40
1.20
1.00
.80
.60
.40
.20
.00
TOTAL COST
PRODUCTION COST
Selling and Administration
Miscellaneous and Fixed Charges
Mine Supplies
Mine Labor
Cost Chart 4
Eastern Sub-Division
Costs by Months
Nov. 1933 – Jan. 1935
NOV. 1933
DEC.
JAN. 1934
FEB
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN. 1935

F. Average Costs by N.R.A. Code Subdivisions.

Analytical discussion of costs will not be made for the seam groups or areas within the principal Subdivisions. The reader is referred to condensed tabulations of costs by areas, month by month during the entire 15-month reporting period, which appear in the appendix of cost tables.

1. Eastern Subdivision of Division I: This Subdivision includes Central Pennsylvania, Southern Somerset, Maryland and Upper Potomac fields. In 1934 its production totaled 37,794,000 tons or 10.55 per cent of the U. S. total, according to preliminary estimates of the U. S. Bureau of Mines. (*)
Of the Subdivision total, Maryland and Upper Potomac output was 2,462,000 tons and the other 35,332,000 tons were produced in Central Pennsylvania (called "Eastern Pennsylvania" in N.R.A. terminology)

Total cost averaged $1.7328 during the 5 months of 8-hour day (40-hour week) operation, during which period the reporting mines worked an average of 91 days, or a simple average of 18.2 days per month.

In the 10 months of 7-hour day (35-hour week) operation beginning April 1, 1934, the average total cost increased by 38.54 cents to $2.1182 per ton. This period, however, included six slack months of the spring and summer, and the working days per month averaged only 15.1; obviously the increase in cost in this period is in part due to less working time. The actual increase in production cost alone was 34.21 cents. By projection methods already explained, the approximate production cost, had the same mines operated 18.2 days monthly (as they did in the earlier period), is indicated as about 9 cents per ton less. This represents the influence of the smaller number of working days. In other words, the increase in production cost during the 7-hour day period may be estimated at nearer 25 cents per ton than the 34.21 cents shown in the summaries. Of this 25 cents, labor cost contributed about 18.5, supplies about 2.8 cents, miscellaneous and fixed charges about 3.7 cents per ton. Selling and administrative expense showed an actual increase of 4.33 cents. It is fair to say that the total cost in the Eastern Subdivision increased, on a comparable basis, about 29 cents per ton under Amendment 1.

An examination of the dispersion of mines and tonnages according to cost intervals of 10 cents, conveys a fairer picture of the mine relationships as to cost than can be had from averages alone. For purpose of comparison, a brief discussion will here be made of the cost dispersions for November 1933 and for January 1935, typical months in the 40-hour and 35-hour week periods, respectively.

Mines in this Subdivision showed for November, 1933, a dispersion of costs, ranging from the "$1.20 - $1.40" group to "$2.50 and over." To aid in analyzing the significant indications, the following brief recapitulation is presented:

Eastern Subdivision of Division I - November 1933

Cost Per Ton (under)	No. of Mines	% of Total Tons	Avg. Output Per Mine Per Day (Tons)	Avg. No. of Tipple Starts	Avg. Cost Per Ton
$1.20 - $1.40	7	9.8	1,534	20.1	$ 1,340
1.40 - 1.50	11	10.5	1,099	19.0	1,457
1.50 - 1.60	19	15.4	1,019	17.4	1,559
1.60 - 1.70	22	9.9	639	15.4	1,643
1.70 - 1.80	24	16.8	869	17.6	1,763
1.80 - 1.90	26	16.0	817	16.5	1,857
1.90 - 2.00	14	7.9	855	14.5	1,940
2.00 - 2.10	14	5.5	617	13.8	2,067
2.10 - 2.20	7	1.4	348	13.1	2,141
2.20 - 2.50	8	3.5	733	13.1	2,415
2.50 & over	12	3.3	554	10.9	2,704
Total	164	100.0	816	16.4	$ 1,752

The lower cost ranges obviously embrace, in general, mines with higher per-day output and with greater average working days. Outstanding exceptions are (1) the $1.60 - $1.70 group with lower average output per mine per day than 4 of the higher cost groups and with fewer average days worked than 2 of the higher cost groups; and (2) the $2.20 - $2.50 group of 8 mines with larger average output per day than 3 of the lower-cost groups, and the same average number of working days as the $2.10 - $2.20 group of 7 mines whose average daily output was less than half as great for the same average number of days worked. It should be remembered that each group average is for a number of mines one or more of which may be an exception to this general trend. It should also be remembered in all these frequency comparisons that size of mine is a minor influence and that this factor together with number of days worked is insufficient to account for a difference of placement in the next interval-group if working days of a group had equaled the average of the Subdivision.

With these principal exceptions, the progressively increasing cost groups reflect, as would be expected, a general trend downward either in Average Number of Tipple Starts or in Average Daily Output per Mine, or both.

There are other important cost influences such as thickness of seam, geological weaknesses in roof or floor, faults, etc., which undoubtedly help to account for the higher cost groups, especially that ranging from $2.20 to $2.50. Data are not available from which to make analyses sufficently searching to disclose all of the factors responsible for these exceptions.

A similar examination of the frequency dispersions for 166 mines reporting in January 1935, under the increased costs of the second Code period, reveals a different general picture as regards distribution of the mines among the groups. The group of largest average daily producers are far from the lowest-cost group, and the highest cost group enjoys better than the average number of working days:

Eastern Subdivision of Division I - January 1935

Cost Per Ton	No. of Mines	% of Total Tons	Avg. Output Per Mine Per Day	Avg. No. of Tipple Starts	Avg. Cost Per Ton
(under)			(Tons)		
$1.30 - $1.60	9	7.0	1,120	17.8	$ 1.549
1.60 - 1.70	12	5.4	604	18.8	1.666
1.70 - 1.80	17	7.1	621	17.1	1,754
1.80 - 1.90	20	12.5	795	20.1	1,839
1.90 - 2.00	23	21.6	1,270	18.8	1,955
2.00 - 2.10	25	13.6	767	18.0	2,036
2.10 - 2.20	18	11.5	929	17.5	2,160
2.20 - 2.30	10	6.9	882	19.8	2,261
2.30 - 2.40	12	7.2	836	18.3	2,333
2.40 - 2.50	4	1.1	551	12.9	2,469
2.50 & over	16	6.1	486	19.9	2,741
Total	166	100.0	829	18.5	$ 2.018

Note that several of the larger mines, as to average daily output, do not fall in the low-cost brackets. In fact, the two groups $1.60 - $1.70 and $1.70 - $1.80 are composed of medium size mines on the average and had about average working days, stamping them as enjoying definitely low-cost operating conditions. Per contra, the two highest-cost groups combined averaged 18.3 days of work, or about the average of all reporting mines in January 1935, and are quite conclusively stamped as operating on the average under high-cost conditions, not necessarily connected with their smaller daily rate of production.

Possible Result of Allocation of Production on Cost Basis: In the absence of more detailed knowledge of all the conditions attaching to the higher-cost groups, it is somewhat unfair to speak of the possible effect on costs if a certain percentage of highest cost mines were to be closed. It is in fact quite possible that some of the highest cost mines produce special coals required for certain uses, and find a ready market even at higher prices. It must be borne in mind that this is a purely statistical application and ignores several practical considerations, among them the "special coals" already mentioned. There is also the prime consideration of consumer advantage in price so that an actual application of the allocation theory might well leave mines in the picture at very high cost levels but enjoying preferred geographical location with reference to markets. Freight rate advantages might well offset or more than offset cost disadvantages. With full knowledge of probable qualifying circumstances, such a projection has been made, using Eastern Subdivision as the example, November 1933 as a typical 8-hour-day month, and January 1935 as a typical 7-hour-day month. The representation of these reporting mines is about 78 per cent of total commercial production. This fact alone stamps the data available as insufficiently representative for the purpose at hand, since it is prbable that the 22 per cent of unreported tonnage was produced largely by small operations mining at comparatively high costs.

The responsibility for producing the entire output is here assigned to the remaining mines, and cost of production is projected on the assumption of an opportunity for all mines to enjoy approximately the same number of working days per month. Such an allocation points to a practical monopoly among a limited number of mines.

The result for November 1933 leaves the 123 mines which operated at costs up to $2.00 per ton and produced 86.3 per cent of the total shown, and permits them 19.9 days of operation to produce about the same total tonnage as was reported by the 164 reporting mines. Roughly projected by interval groups, a decrease in cost is shown for the entire 123 mines amounting to 12 cents per ton, to an average cost of $1.635.

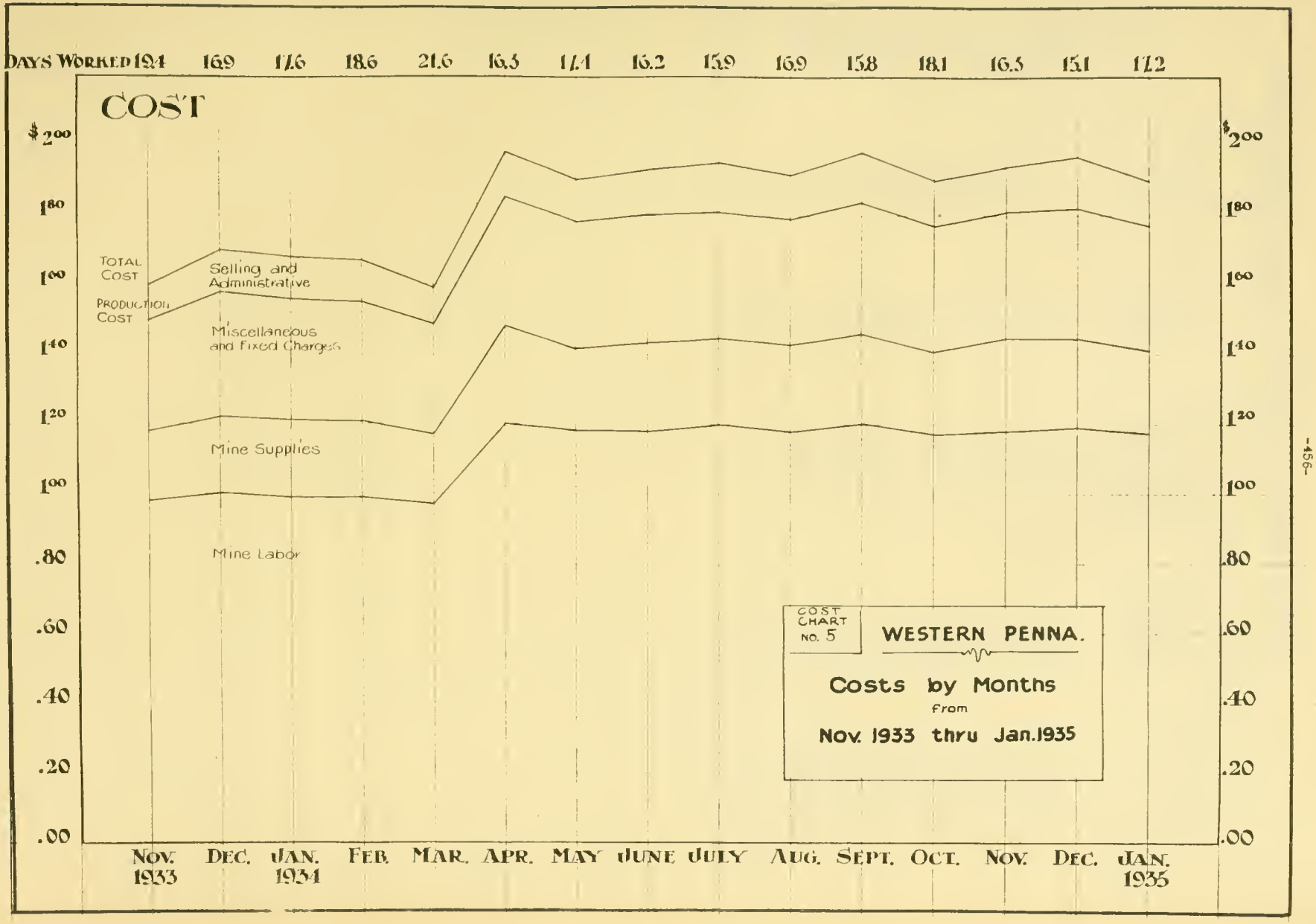
The result for January 1935 would leave in operation 134 mines which reported costs up to $2.30 per ton and produced 85.6 per cent of the total of all 164 reporting mines; it would also permit the 134 mines 21.6 working days to produce the total of 2,543,000 tons. Roughly projected, by dispersion groups, the decrease in cost appears as 12.7 cents per ton, with the cost for the 134 mines averaging $1.891 per ton.

These theoretical projections are presented merely as indicative of the result of purely statistical allocation of 100% of production to mines which represented about 85% of the reported output. Similar projections have not been made for other subdivisions, but the basic material exists in files of N.R.A. from which to do so.

2. Western Pennsylvania Subdivision of Division I produced 53,891,000 tons or15.4% of the U. S. output in 1934. (*) Under the 8-hour wage scale in the 5 months preceding April 1934, the average total cost for an average of 143 reporting (deep) mines was $1.6443 per ton. Under the 7-hour wage scale in the 10 months beginning April 1, 1934, the average total cost of 148 reporting mines was $1.9408 per ton, an increase of 29.65 cents per ton. The mines worked only 16.5 days per month on the average, however, as against 18.8 in the first period. The entire increase, therefore, cannot be attributed to the changed hours and wages. In fact, the 10-month average production cost projected to 18.8 days indicates that had the reporting mines been able to reach that average monthly working time, production cost would have been less by about 4.25 cents. Instead of $1.9083 per ton the figure would have been $1.7658, an increase of 22.94 cents over $1.5364 in the earlier period. It would thus appear that on a comparable basis of days worked, approximate total cost increase during the second period was about 25 cents per ton.

The dispersion of mines and tonnages by 10-cent intervals of costs reflects the cost relationships among the mines that make up the averages. Briefly recapitulated, these dispersions for November 1933 under the first or 8-hour-day period of the Code appear as follows:

(*) U. S. Bureau of Mines W.C.P. 919, February 15, 1935; preliminary estimate.


DAYS WORKED 19.4 16.9 17.6 18.6 21.6 16.3 17.1 16.2 15.9 16.9 15.8 18.1 16.5 15.1 17.2
COST
$2.00
1.80
1.60
1.40
1.20
1.00
.80
.60
.40
.20
.00
TOTAL COST
PRODUCTION COST
Selling and Administrative
Miscellaneous and Fixed Charges
Mine Supplies
Mine Labor
COST CHART NO. 5
WESTERN PENNA.
Costs by Months
from
Nov. 1933 thru Jan. 1935
NOV. 1933
DEC.
JAN. 1934
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN. 1935

Western Subdivision of Division I - November 1933

Cost Per Ton (under)	No. of Mines	% of Total Tons	Avg. Output Per Mine Per Day (Tons)	Avg. No. of Tipple Starts	Avg. Cost Per Ton
$1.10 - $1.20	2	.6	664	14.9	$ 1.172
1.20 - 1.30	7	5.2	1,230	20.6	1,251
1.30 - 1.40	14	6.6	818	19.8	1.355
1.40 - 1.50	25	17.6	1,194	20.1	1,446
1.50 - 1.60	22	15.1	1,217	19.3	1.547
1.60 - 1.70	30	32.7	1,814	20.5	1.642
1.70 - 1.80	20	8.2	732	19.1	1,752
1.80 - 1.90	6	2.2	642	19.3	1,849
1.90 - 2.00	19	10.4	1,116	16.7	1.948
2.00 - 2.10	3	.6	503	13.4	2,045
2.20 - 2.30	2	.4	695	10.3	2.216
2.40 - 2.50	2	.4	428	16.2	2.438
Total	152	100.0	1,157	19.4	1.604

The lowest cost bracket includes 2 mines which obviously must be operating under unusually advantageous conditions. In spite of their small daily output and working time 4½ days below the average for the Subdivision (both of which circumstances tend to increase the per ton cost), their average cost per ton was almost 8 cents less than the average of the next lowest group.

Although the 30 mines whose individual costs fall between $1.60 and $1.70 were the largest in average daily output per mine, 1,814 tons, and enjoyed 20¼ working days, still their costs averaged $1.642, or 47 cents per ton more than the 2 mines which, with over 5 fewer working days and only about one-third of the daily output per mine, fell in the lowest-cost group.

The $2.40 - $2.50 mines apparently operate normally under high cost conditions, since their costs averaged $2.438 even with better working time than the 2 mines in the $1.10 - $1.20 group.

Mines producing 88.2 per cent of the total reported by these 152 Western Pennsylvania operations ranged in cost between $1.10 and $1.90 limits; 11.8 per cent of the total tonnage averaged over $1.90 in cost.

A similar recapitulation for January, 1935, a typical month in the 7-hour day period, shows a somewhat different picture:

Western Subdivision of Division I - January 1935

Costs Per Ton (under)	No. of Mines	% of Total Tons	Avg. Output Per Mine Per Day (Tons)	Ave. No. of Tipple Starts	Average Cost Per Ton
$1.40 - $1.50	9	5.6	783	23.0	$ 1.446
1.50 - 1.60	5	3.2	914	19.9	1.531
1.60 - 1.70	20	10.5	782	19.4	1.663
1.70 - 1.80	21	13.3	993	18.4	1.738
1.80 - 1.90	24	13.2	783	20.3	1.860
1.90 - 2.00	25	19.8	1,364	16.7	1.955
2.00 - 2.10	26	22.1	1,418	17.3	2.061
2.10 - 2.20	9	4.6	1,304	11.4	2.175
2.20 - 2.30	10	3.2	637	14.7	2.248
2.30 - 2.40	5	2.2	1,039	12.0	2.321
2.40 - 2.50	2	2.0	2,549	11.4	2.466
2.50 & over	3	0.3	515	5.6	2.516
Total	159	100.0	1,056	17.2	1.904

Here the lowest cost group of 9 mines averages $1.446, reflecting 27.4 cents per ton increased cost over the lowest-cost group of 2 mines in November 1933 and 19.5 cents increase over the 7 mines in the second lowest-cost group of that month.

The first five lower-cost groups, with working time exceeding the average of all mines for this month by from 1.2 to 5.8 days, all average less in daily output per mine than does the entire group of 159 mines. In the succeeding higher-cost-groups the general trend of working days and daily output account to a great extent for the groupings.

The highest cost group is composed of 3 mines of comparatively small daily output and only 5.6 working days. By projection, had these 3 mines enjoyed as many as 17 days of work, their average cost would have been around $1.90 per ton. On the other hand, had the 2 mines in the $2.40 - $2.50 interval had 17 working days, their average costs, by projection, would appear to be about $2.29 per ton, still comparatively high-cost.

3. Ohio Subdivision of Division I produced in 1934 a total of 20,842,000 net tons, or 5.81 per cent of the U. S. production. (*) The 57 (deep) mines reporting during the 5 months of the 40-hour week averaged 17.6 working days a month and a total cost of $1.5243 per ton, but in the 10 months following, under the 35-hour week, the average monthly working days was only 13.8 and the cost increased to $1.8031 or 27.88 cents per ton.

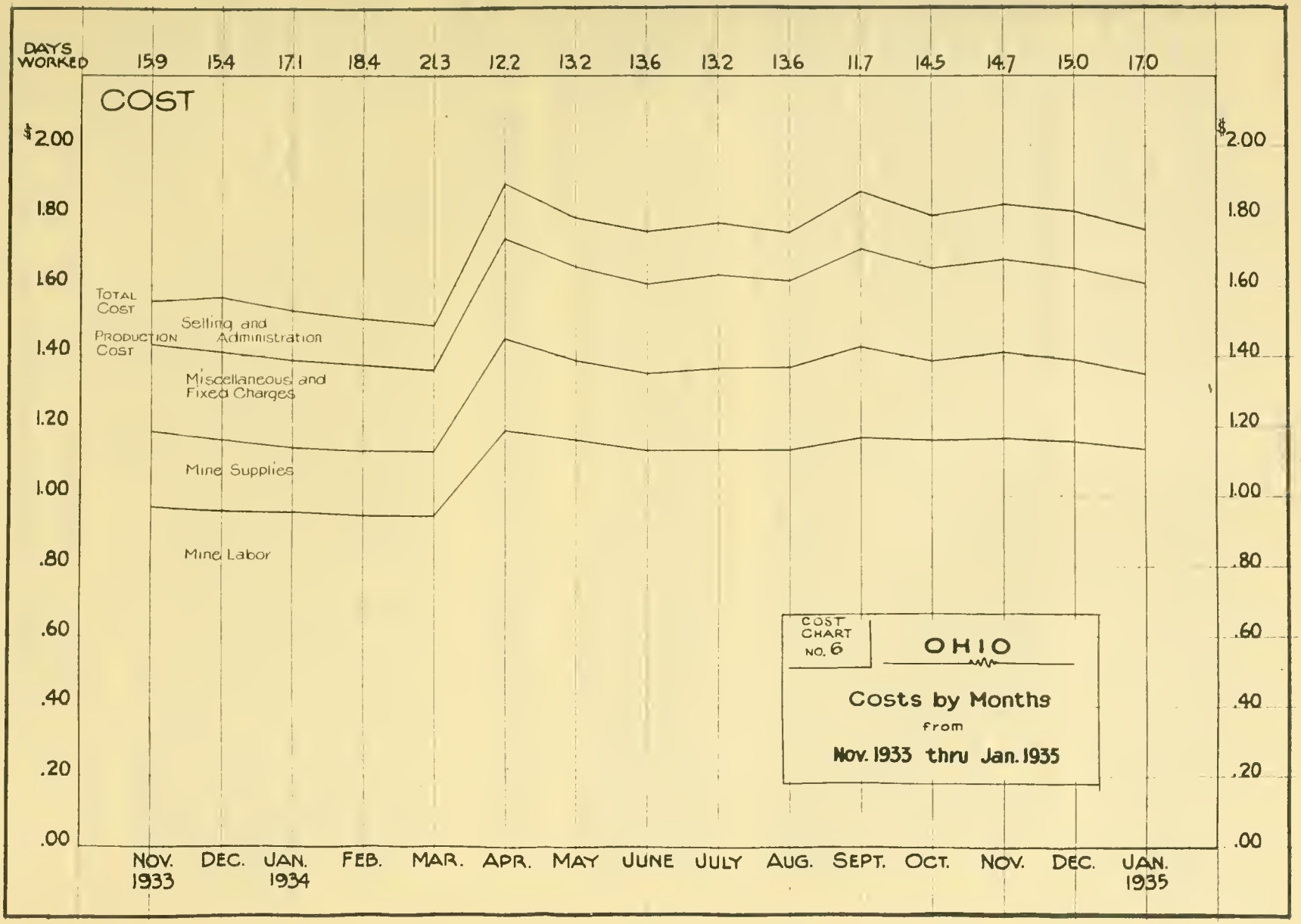
The production cost in the first period of $1.3896, increased in the second period to $1.6506, or 26.1 cents per ton. A projection of this latter cost to a basis of 17.6 days, however, reflects the cost after removal of the influence of fewer working days. On this more nearly comparable basis, the increase in production cost appears to be about 18.5 cents per ton. The comparable costs for similar working days indicate the increase in total cost to have been about 20.5 cents per ton in the later period, of which labor increase accounted for about 15.5 cents, supplies and fixed charges about 3 cents, and selling and administrative about 2 cents.

Frequency Tables show that 38 of the 60 reporting mines, producing 84.4 per cent of the reported production for November 1933, fell between $1.20 and $1.70 in average costs per ton. Compared with the dispersions for Eastern and Western Pennsylvania Subdivisions already discussed, this is a narrow range of costs for so large a proportion of the total. A similarly narrow range occurs in January 1935, when 43 out of 56 mines, or 84 per cent of the tonnage, fell between $1.40 and $1.90 in cost per ton.

4. Michigan Subdivision of Division I produced 631,000 tons or 0.18 per cent of the U. S. output in 1934. (**) In the earlier period average costs for Michigan operators appear as $2.714 and in the succeeding period average costs increased to $3.1848, or 47.08 cents per ton. It is interesting to note that, although cost of labor and supplies averaged decidedly higher, respectively 36 and 12.8 cents per ton (a total of 48.8 cents), the average cost per ton for fixed charges and for selling and administration were slightly reduced.

(*) U. S. Bureau of Mines W.C.R. 919, February 15, 1935; preliminary estimate.

(**) U. S. Bureau of Mines, preliminary estimate, W.C.R. 919; February 15, 1935.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14.7
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17.0
COST
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1.00
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.60
.40
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.00
TOTAL COST
PRODUCTION COST
Selling and Administration
Miscellaneous and Fixed Charges
Mine Supplies
Mine Labor
NOV. 1933
DEC.
JAN. 1934
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN. 1935
COST CHART NO. 6
OHIO
Costs by Months
from
Nov. 1933 thru Jan. 1935

No projection of costs to the greater number of working days enjoyed in the earlier period can be made, the basic data being unavailable. The average costs in Michigan are higher than in the other Eastern Subdivisions principally because of the localized and limited extent of workable deposits, comparatively low average thickness of the seams, prevalence of weak roofs, and other disadvantages.

5. Panhandles Subdivision of Northern West Virginia (Division I) produced 3,982,000 tons or 1.11 per cent of the estimated U. S. total output in 1934. (*) From this relatively small Subdivision, an average of only 6 mines reported costs for the 4 months beginning November 1933 and no reports were made available for March 1934; during the next 10 months 5 mines consistently reported and in the first 3 months another mine's reports were included. The average days worked per month in the 4 months under the 8-hour day was 20.3; and in the 10 months under the 7-hour day 18.4 per month. The indicated increase in cost in the second period over the first is 14.18 cents; although the labor cost alone averaged an increase of 14.58, supplies and fixed charges actually decreased almost 2 cents per ton, with selling and administrative expenses increasing by 1.58 cents per ton.

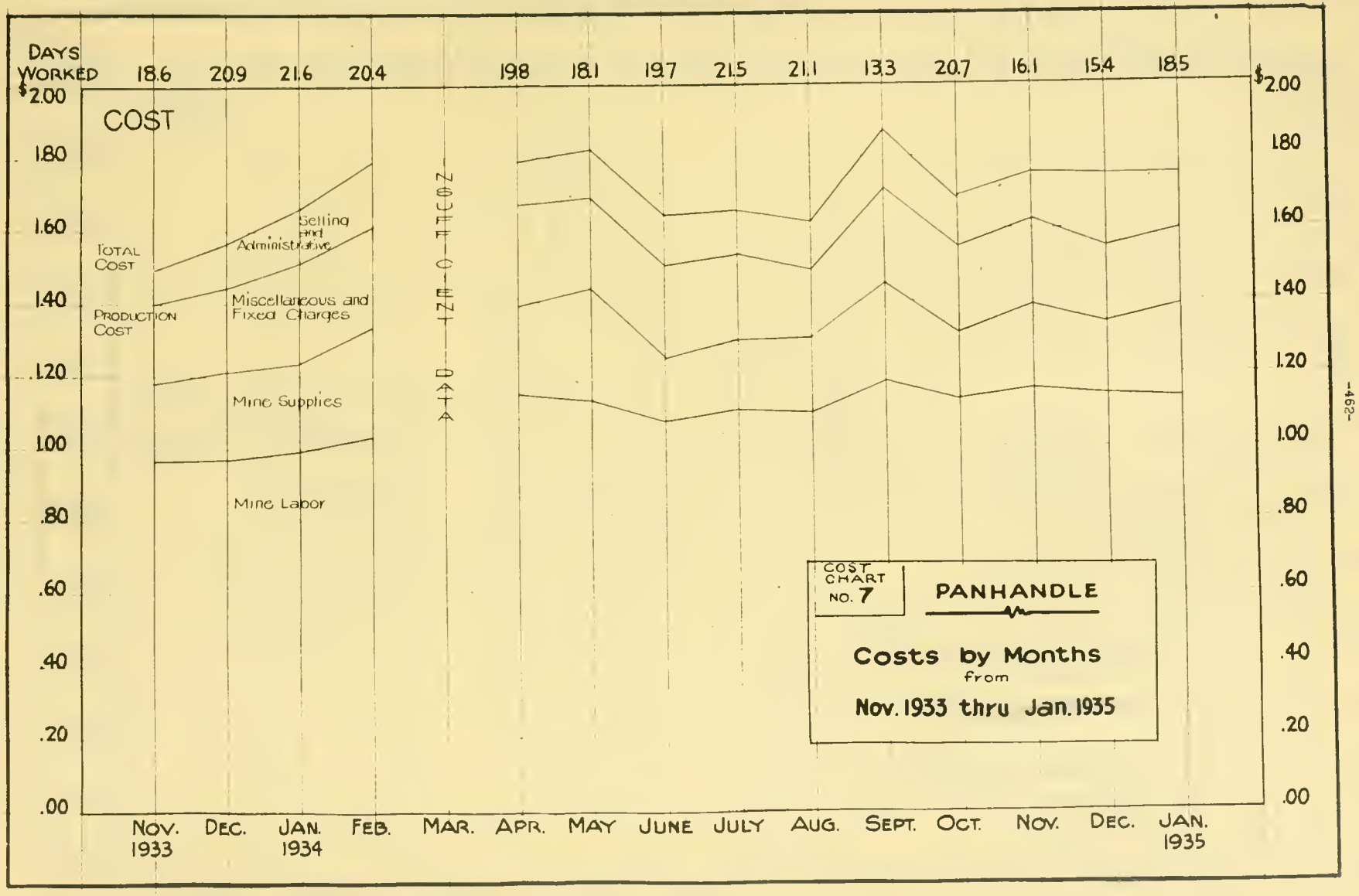
Data are not available upon which to base a projection to the greater number of working days, which would reduce the increase here shown still further. It is apparent that mines in this Subdivision were more successful than in other sections in overcoming some of the effect of reduced working hours and increased wages. It is understood that physical operating conditions, including mechanization, were very favorable to success in this direction.

6. Northern West Virginia Subdivision of Division I: This Subdivision produced 13,114,000 tons, or 5.33 per cent of the U. S. total output in 1934. (**)

The total average cost of the 65 reporting mines for the 5 months of the first or 40-hour week period was $1.3151, and for the 58 mines reporting for the second or 35-hour week period it was $1.6671, an increase of 35.2 cents per ton. Some of this increase is due to the influence of fewer working days in the second period, when the average monthly days worked was 13.34 as against 17.7 in the earlier period. By the projection method previously described, an approximation can be made of the production cost per ton if the mines had worked 17.7 days in the second period; this figure is $1.3990, which when compared with $1.1593 production cost in the earlier period, shows an increase of 23.97 cents per ton. The increase in selling and administrative expense amounts to about 5 cents per ton. It is safe to estimate the increase in total cost on a basis of comparable working days at about 28 cents per ton.

(*) U. S. Bureau of Mines, W.C.R. 919, February 15, 1935.

(**) U. S. Bureau of Mines preliminary estimate, W.C.R. 919, February 15, 1935.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16.1
15.4
18.5
$2.00
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1.40
1.20
1.00
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.60
.40
.20
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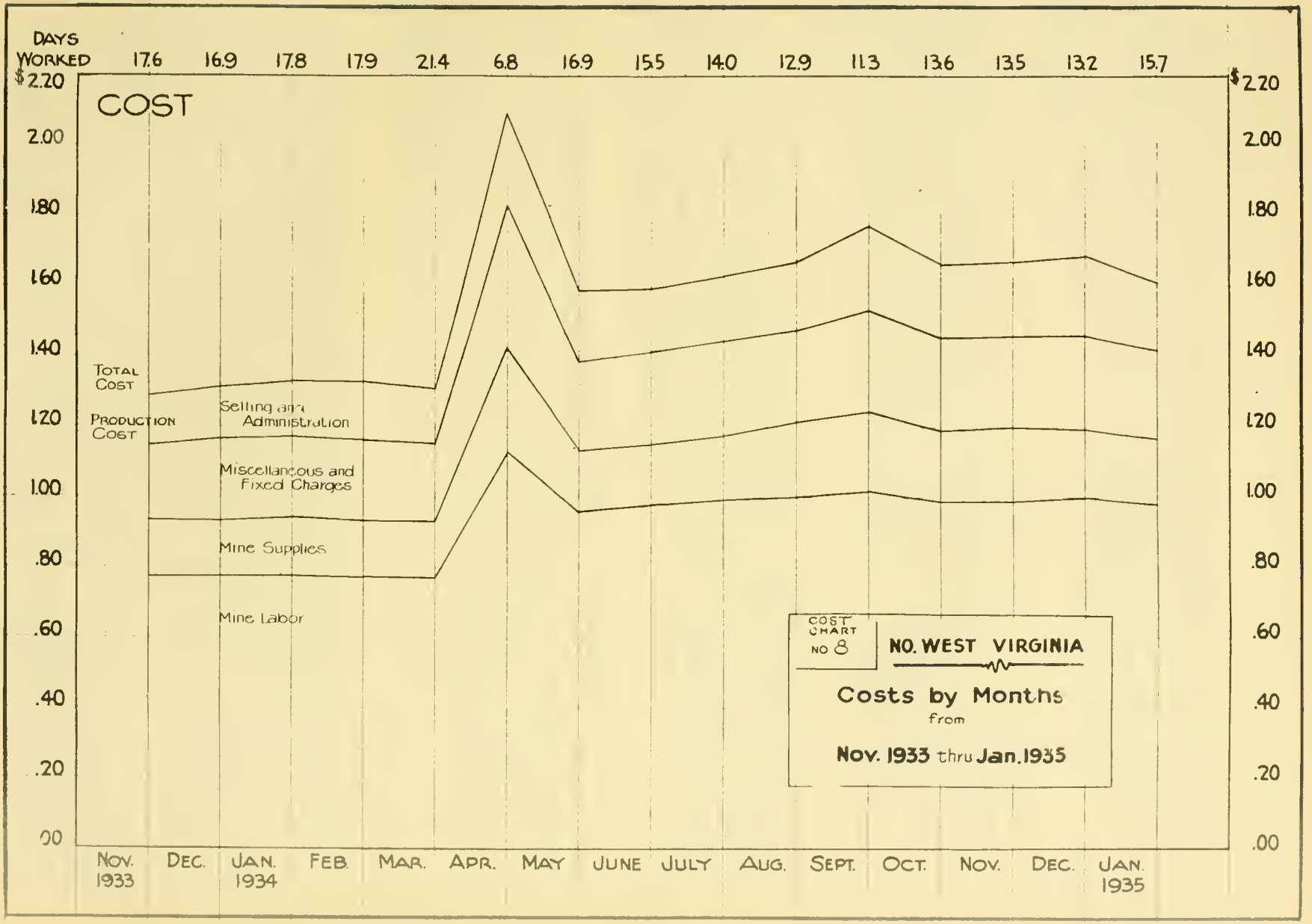
COST
TOTAL COST
Selling and Administrative
PRODUCTION COST
Miscellaneous and Fixed Charges
Mine Supplies
Mine Labor
NOV. 1933
DEC.
JAN. 1934
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN. 1935
COST CHART NO. 7
PANHANDLE
Costs by Months
from
Nov. 1933 thru Jan. 1935


DAYS WORKED
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17.9
21.4
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16.9
15.5
14.0
12.9
11.3
13.6
13.5
13.2
15.7
COST
$2.20
2.00
1.80
1.60
1.40
1.20
1.00
.80
.60
.40
.20
.00
TOTAL COST
PRODUCTION COST
Selling and Administration
Miscellaneous and Fixed Charges
Mine Supplies
Mine Labor
COST CHART NO 8
NO. WEST VIRGINIA
Costs by Months
from
Nov. 1933 thru Jan. 1935
NOV. 1933
DEC.
JAN. 1934
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN. 1935

Data published by this Subdivisional Code Authority provide a basis for comparing the daily productivity per man under the 8-hour day with that under the 7-hour day. The average production per man per day during the six months of the 8-hour day period extending from October 1, 1933, through March 31, 1934, was 5.9 tons; and for the ensuing six months under the 7-hour day (April 1 through September 30, 1934) was 5.6 tons per day. (*)

Thus the reduction in working hours per day from 8 to 7 effected about a 5 per cent decrease in tons produced per man-day, quite disproportionate to the 12½ per cent reduction in working time. Informal conversation with those having knowledge of this situation placed the credit upon the combined efforts of men and management: increased mechanical equipment installed, more working places provided, all operations of mining, loading, hauling studiously synchronized to a greater degree than previously.

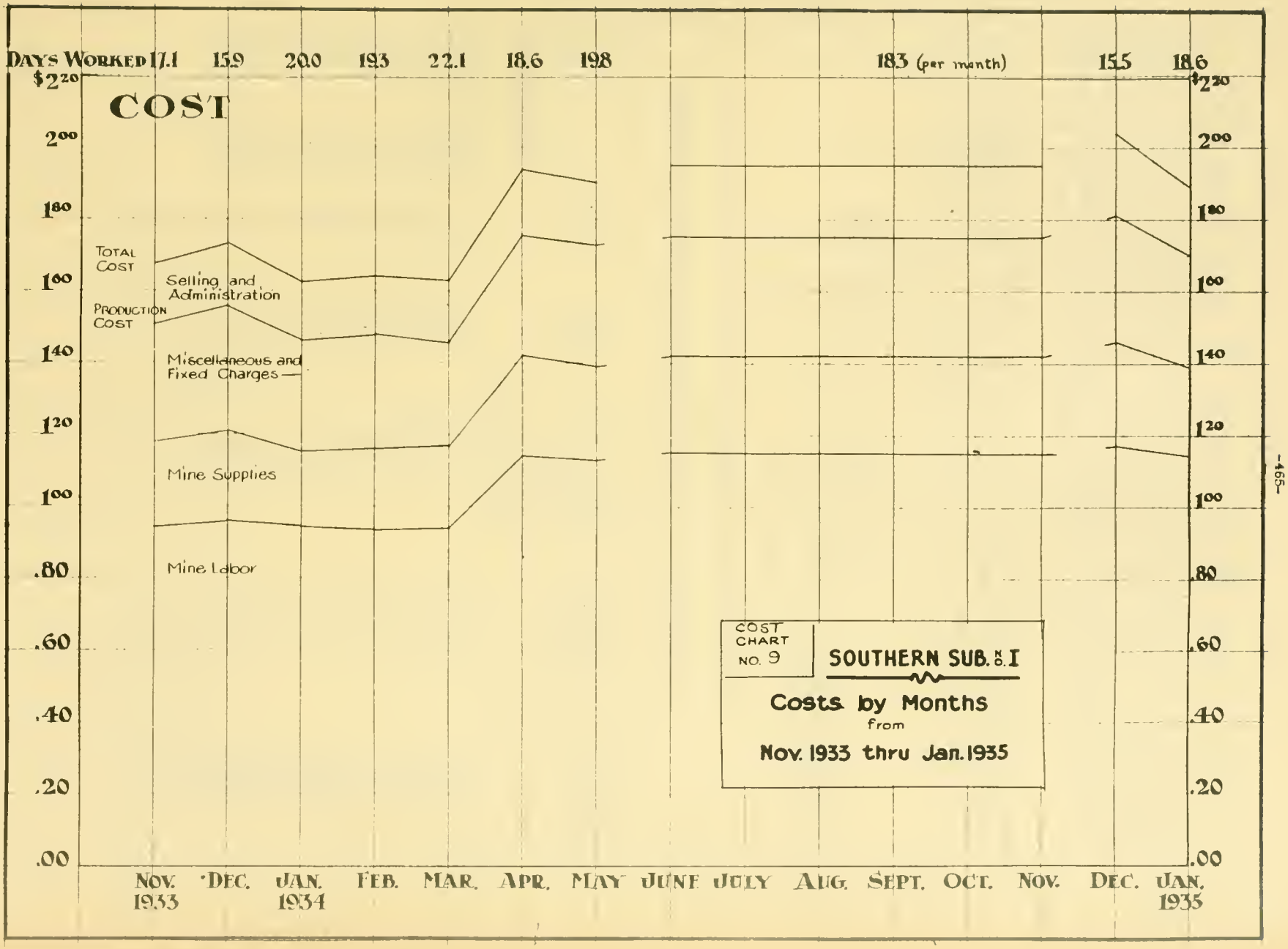
Frequency tables of mines in 10-cent cost intervals disclose the comparatively narrow cost range of the bulk of tonnage produced by the 65 mines reporting for November 1933 and January 1935. All but 16 of the 65 mines and 10.9 per cent of the total tonnage reporting in November 1933 showed costs between 90 cents and $1.50 per ton; in January 1935, all but 11 of the 64 mines and 10.4 per cent of the total tonnage reporting showed costs between $1.20 and $1.80 per ton.

7. Southern (Smokeless) Subdivision No. 1 of Division I: In 1934 this Subdivision produced 12.32 per cent of the total United States output, according to preliminary estimates of the U. S. Bureau of Mines. (**) The mines producing low-volatile (commonly called "smokeless") coal in Pocahontas, New River, Greenbrier and Winding Gulf fields of West Virginia comprise this Subdivision, together with a small group of high-volatile mines in the New River district. The high volatile production in this Subdivision was minor and was not included in the summary reports.

Total cost during the five-month reporting period of 40-hour-week operation averaged $1.657 per ton; during the succeeding 10 months under a 35-hour week, beginning April 1, 1934, the composite average for the period was $1.9473 per ton, an increase of 29.03 cents per ton in the second period. With no slack season, due to heavy summer business over the Great Lakes, monthly working days were maintained at a steadier rate than in any other subdivision, averaging 18.9 per month in the first period and 18.2 per month in the second period. The average monthly working days were so nearly the same in both periods that it is fair to accept about 29 cents per ton as the average increase in cost.

(*) "Compilation of Statistical Data Covering Period October 1st, 1933, to March 31st, 1934", dated April 1, 1934, by Northern West Virginia Subdivisional Code Authority, p. 106; and Supplement No. 1 thereto dated October 1, 1934, p. 87; in N.R.A. Bituminous Coal Unit Files.

(**) U. S. Bureau of Mines preliminary estimate, 7.C.R. 919, February 15, 1935.


DAYS WORKED 17.1 15.9 20.0 19.3 22.1 18.6 19.8 18.3 (per month) 15.5 18.6
COST
$2.20
2.00
1.80
1.60
1.40
1.20
1.00
.80
.60
.40
.20
.00
TOTAL COST
Selling and Administration
PRODUCTION COST
Miscellaneous and Fixed Charges
Mine Supplies
Mine Labor
NOV. 1933
DEC.
JAN. 1934
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN. 1935
COST CHART NO. 9
SOUTHERN SUB. NO. I
Costs by Months
from
Nov. 1933 thru Jan. 1935

The dispersion of mines in 10-cent interval groups by cost per ton shows that 118 of the 143 reporting mines and 90.4 per cent of the total tonnage was produced and sold at a cost under $2.00 per ton in November, 1933; 105 mines out of 139 and 85.6 per cent of the tonnage at a cost under $2.00 per ton in December, 1933; 145 out of 153 mines and 96.9 per cent of the tonnage in January, 1934; 95.8 per cent of the tonnage in February, 1934; and 93.8 per cent of the tonnage in March, 1934; all in the first or 8-hour-day period of the N.R.A. Code.

Beginning with April 1, 1934, the cost increased during the succeeding 10 months under the 7-hour day by an average of about 29 cents per ton. In these months, the proportions of total tonnage reported at a cost of under $2.30 per ton were as follows:

April 1934	--	94.2 per cent
May 1934	--	92.3 " "
June to Nov.	--	Not available
Dec. 1934	--	85.7 per cent (a month of accounting adjustments)
Jan. 1935	--	96.9 per cent.

The frequencies briefly recapitulated are as follows:

Southern (Smokeless) Subdivision No. 1 of Division I

Cost Per Ton (under)	No. of Mines	% of Total Tons	Avg. Output Per Mine Per Day (Tons)	Avg. No. of Tipple Starts	Avg. Cost Per Ton
			November 1933		
$1.10 - $1.40	8	8.0	1,193	21.6	$1.345
1.40 - 1.50	16	19.2	1,646	18.8	1.441
1.50 - 1.60	15	11.0	1,172	16.2	1.568
1.60 - 1.70	25	21.0	1,235	16.9	1.649
1.70 - 1.80	21	14.0	996	17.3	1.745
1.80 - 1.90	18	11.2	858	18.9	1.839
1.90 - 2.00	15	6.0	643	16.0	1.942
2.00 - 2.10	10	3.8	831	11.7	2.046
2.10 - 2.20	6	2.3	692	14.2	2.133
2.20 - 2.30	4	1.9	860	14.1	2.235
2.30 - 2.50	3	1.1	622	14.5	2.444
2.50 & over	2	0.5	618	9.3	2.795
Total	143	100.0	1,054	17.1	$1.679

Southern (Smokeless) Subdivision No. 1 of Division I

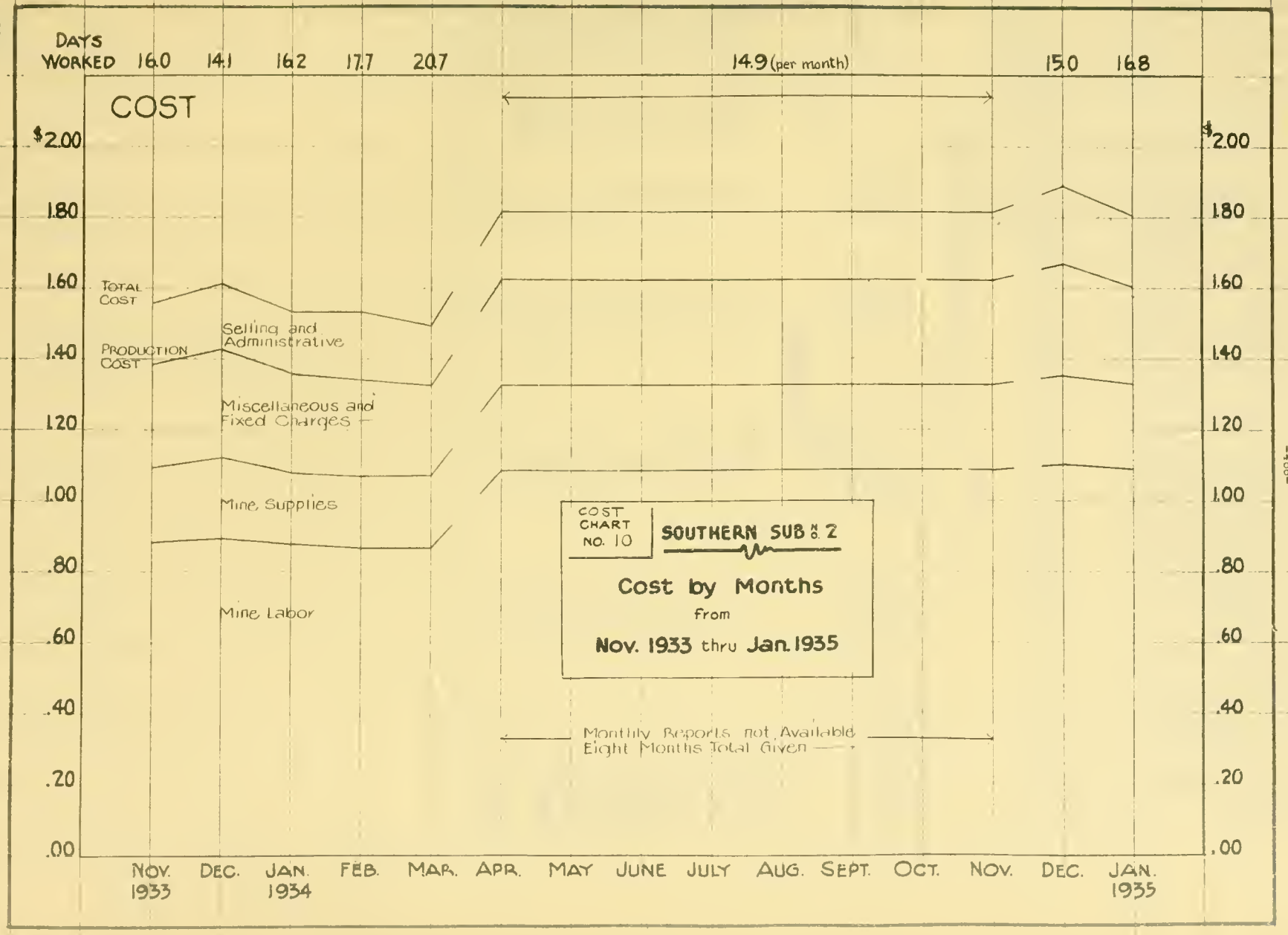
Cost Per Ton (under)	No. of Mines	% of Total Tons	Avg. Output Per Mine Per Day (Tons)	Avg. No. of Tipple Starts	Avg. Cost Per Ton
		January 1935			
$1.40 - $1.50	2	.4	314	21.2	$ 1.449
1.50 - 1.60	11	12.2	1,728	22.4	1.561
1.60 - 1.70	9	7.9	1,548	19.7	1.671
1.70 - 1.80	26	16.9	1,128	20.0	1.751
1.80 - 1.90	24	16.2	1,230	19.0	1.842
1.90 - 2.00	12	7.3	1,082	19.4	1.944
2.00 - 2.10	36	24.2	1,323	17.6	2.032
2.10 - 2.20	11	5.2	1,218	13.6	2.150
2.20 - 2.30	10	6.6	1,355	17.0	2.244
2.30 - 2.40	3	.9	710	13.7	2.373
2.40 - 2.50	3	.7	490	16.6	2.462
2.50 & over	6	1.5	631	13.9	2.618
Total	153	100.0	1,225	18.6	$ 1.894

It will be noted that the November 1933 grouping shows a fairly general trend from the larger mines to the smaller, and from more to fewer working days, as average costs rise, although it must be recognized that the 10-cent intervals of cost are greater than could be attributed to these factors alone. This is plainly illustrated by the fact that in the January 1935 grouping the 2 mines composing the lowest cost group averaged only 314 tons of production per mine per day, yet with a day less of working time had an average cost 11.2 cents per ton less than the second lowest cost group of 11 mines which turned out 1,728 tons per mine per day. It is clear that the two low-cost mines were definitely enjoying comparatively advantageous conditions other than good working time.

8. Southern Subdivision No. 2 of Division I: This Subdivision produced 20.23 per cent of the total United States Output in 1934, according to preliminary estimates of the U. S. Bureau of Mines. (*)

Total cost of 256 mines, averaged over the entire 5 month period November 1933 - March 1934, was $1,5424; for the following 10 months, April 1934 - January 1935, the composite average of 208 mines was $1.8199. This was an apparent increase of 27.75 cents per ton in the second or 7-hour-day period over the first or 8-hour-day period. The factor of monthly average working days contributed some of this increase, however.

(*) U. S. Bureau of Mines W.C.R. 919, February 15, 1935.


DAYS WORKED 16.0 14.1 16.2 17.7 20.7 14.9 (per month) 15.0 16.8
COST
$2.00
1.80
1.60
1.40
1.20
1.00
.80
.60
.40
.20
.00
TOTAL COST
PRODUCTION COST
Selling and Administrative
Miscellaneous and Fixed Charges
Mine Supplies
Mine Labor
COST CHART NO. 10
SOUTHERN SUB No. 2
Cost by Months
from
Nov. 1933 thru Jan. 1935
Monthly Reports not Available
Eight Months Total Given
NOV. 1933
DEC.
JAN. 1934
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN. 1935

A projection of the production costs in the second period from the (simple) average of 15.1 working days to the same average number of days available per month during the first period, 16.9, by methods previously described, approximates the increase had the reporting mines enjoyed the greater number of working days with all other conditioning factors unchanged. The production cost by this projection would have been about 3.55 cents less, or $1.591 instead of $1.6265 per ton. It is fair to estimate the increase in total cost in the second period over the first to have been about 24 cents per ton.

Frequency tables covering total costs for January 1934 and January, 1935, two fairly comparable months as to working days may be briefly recapitulated as follows:

Southern Subdivision No. 2 of Division I

Cost Per Ton (under)	No. of Mines	% of Total Tons	Avg. Output Per Mine Per Day (Tons)	Avg. No. of Tipple Starts	Avg. Cost Per Ton
		January 1934			
$1.00 - $1.20	10	10.5	2,388	17.7	$ 1.120
1.20 - 1.30	14	6.8	971	20.1	1.245
1.30 - 1.40	25	11.6	1,082	17.3	1.354
1.40 - 1.50	34	14.1	1,035	16.1	1.446
1.50 - 1.60	46	18.8	978	16.8	1.552
1.60 - 1.70	38	13.4	830	17.0	1.641
1.70 - 1.80	24	9.1	1,103	13.8	1.752
1.80 - 1.90	24	10.1	1,141	14.7	1.849
1.90 - 2.00	13	3.6	886	12.7	1.954
2.00 - 2.20	6	2.0	934	13.9	2.098
Total	234	100.0	1,056	16.2	$ 1.533

Southern Subdivision No. 2 of Division I

Cost Per Ton (under)	No. of Mines	% of Total Tons	Avg. Output Per Mine Per Day (Tons)	Avg. No. of Tipple Starts	Avg. Cost Per Ton
		January 1935			
$1.20 - $1.40	3	2.0	1,140	21.5	$ 1.275
1.40 - 1.50	7	2.7	799	17.5	1.478
1.50 - 1.60	16	9.5	1,244	17.8	1.562
1.60 - 1.70	47	26.1	1,187	17.1	1.662
1.70 - 1.80	34	16.1	1,003	17.2	1.745
1.80 - 1.90	26	11.3	934	16.9	1.841
1.90 - 2.00	26	14.9	1,341	16.8	1.933
2.00 - 2.10	19	6.8	870	15.0	2.057
2.10 - 2.20	11	5.0	1,054	17.6	2.147
2.20 - 2.30	6	2.1	691	19.6	2.243
2.30 - 2.40	4	.5	535	8.2	2.333
2.40 - 2.50	7	1.7	612	14.1	2.427
2.50 & over	4	.7	826	7.8	2.688
Total	210	100.0	1,033	16.8	$ 1.805

In January, 1934 the lowest cost group logically included 10 mines showing the largest average output per mine per day and a fairly high average number of days worked; the next three lowest interval groups averaged a much lower output per mine per day and, with a progressively decreasing number of days worked, place themselves generally as might be expected.

The January, 1935, frequency groups, however, present a less regular alignment. Starting with the 3 good-sized mines in the lowest-cost group, $1.30 - $1.40, averaging $1.275, the next lowest group is of comparatively small average size in daily output per mine, with less working time than the third group of much larger mines, still averaging almost 9 cents lower in cost. The next five groups are normally related, but the $2.10 - $2.20 group of 11 mines show an average cost 11 cents higher notwithstanding they are larger in size and had more working days than the next lower-cost group.

9. Western Kentucky Subdivision of Division I: Western Kentucky production in 1934 was 2.2 per cent of the total U. S. output. (*) The mines in this Subdivision reported costs to N.R.A. for November and December 1933 and January 1934. After that date no reports were made, due to the defection of that Subdivision upon the adoption of Amendment 1, April 1, 1934, and the litigation which resulted in an injunction against the enforcement of the wage scale provided in that Amendment for Western Kentucky. There are no data available, therefore, upon which to compare costs during the succeeding months. An average of 27 mines reported a composite average cost for the three months' period of $1.2017 per ton, with average working days of 15.7 per month.

The cost figures for these mines were not included in the Division 1 averages.

10. Indiana Subdivision of Division II: (In 1934 Indiana produced 4.41 per cent of the U. S. Total according to the preliminary estimate of the U. S. Bureau of Mines.) (**)

In Indiana the labor costs for all mines, both deep and strip, although increasing from 60.49 cents to 71.91 cents per ton, constituted practically the same proportion of total costs during the 5-month, 8-hour-day period beginning November 1, 1933 as in the immediately succeeding 10 month, 7-hour-day period, 47.26 per cent and 47.30 per cent respectively. During those periods, the respective average daily production of 54 and 46 mines, working and average of 17.4 days in the first and 14.8 days in the second period, were 1,271 and 1,302 tons per mine. The following tabulation shows the relative and absolute changes in the total cost per ton and in the constituents thereof during these operating periods.

(*) U. S. Bureau of Mines W.C.R. 919, February 15, 1935.

(**) U. S. Bureau of Mines W.C.R. 919, February 15, 1935.

	5 month, 8-hour-day period		10 month, 7-hour-day period	
	Costs per ton	Per Cent of Total Cost	Costs per ton	Per Cent of Total Cost
Mine Labor	$ .3049	47.26	$ .7191	47.30
Mine Supplies	.2698	21.08	.3388	22.29
Miscellaneous and Fixed Charges	.2655	20.74	.1928	12.26
Production Cost	$1.1402	89.08	$1.3507	88.85
Selling and Administration	.1398	10.92	.1696	11.15
Total Cost	$1.2800	100.00	$1.5203	100.00
Average Days Worked Per Mo.	17.4		14.8	
Average No of Mines Reporting	54		46	
Average Daily Production per Mine	1,272		1,302	
Per Cent of Deep Mine Production To Total	62.3		62.7	

Although the above periods are fairly comparable as to representation of higher-cost deep and lower-cost strip mining operations, they are not comparable as to representation of higher and lower-cost seasonal operations. This first period is made up of winter months in which the mines worked uniformly close to 17 days per month at a daily average of about 1,272 tons per mine, while in the latter period the number of days worked per month varied from 11.5 in June, 1934 to 20.1 in January, 1935, with average daily productions per mine varying from 1,223 tons in April, 1934 to 1,314 tons in January, 1935. The costs of a single month may be representative of the cost of a longer period, but it is conceded that comparisons are improved by extending the samples. The following data shows the average production costs for deep and strip mine operations for seasonally comparable 3-month periods, projected to equal working time.

Indiana Subdivision of Division II

Deep and Strip Mines

Month	Average Number of Days Worked	Average Production Costs Projected Nov.1933-Jan.1934	Actual Nov.1934-Jan.1935
November	16.3	$1.2047	$1.2846
December	19.2	1.1167	1.2023
January	20.0	1.0596	1.2107
Total of 3 Months	55.5	$1.1231	$1.2398

These data indicate that during the 7-hour working day the production costs for deep and strip mines combined increased about 11-2/3 cents per ton over those of the 8-hour-day period. The reader is warned that average costs for both deep and strip mine operations are susceptible to considerable change with a shift in the relative proportions of tonnage produced under these two mining methods. Nevertheless, the coal mined under both methods competes in the same market and thus their combined average costs are of considerable significance.

The following tabulation of the frequency distributions for two months, in 10-cent total cost intervals, shows the range of costs and the groupings of mines around the average, thus facilitating an approximation of the bulk-line costs.

Indiana Subdivision of Division II

Frequency Distribution of Total Costs

November 1935 — Deep and Strip Mines

Costs per Ton	Number of Mines	Per Cent of Total Production	Average Daily Output per Mine	Average No. of Turple Starts	Average Cost per Ton
Under .80 - 1.10	6	19.4	2,715	14.6	$1.007
1.10 - 1.20	7	15.0	1,513	17.4	1.151
1.20 - 1.30	11	22.2	1,348	18.3	1.251
1.30 - 1.40	7	6.2	611	17.8	1.363
1.40 - 1.50	9	12.9	957	18.3	1.463
1.50 - 1.60	7	11.4	1,125	17.7	1.547
1.60 - 1.80	4	4.6	670	21.0	1.670
1.80 - 1.90	2	4.4	1,696	16.0	1.855
1.90 - 2.00	2	1.8	988	10.2	1.976
2.10 - 2.20	2	0.7	382	15.7	2.135
2.20 - 2.50	2	1.4	716	13.6	2.289
Totals	59	100.0	1,329	16.9	1.355

November 1934

.80 - 1.00	2	10.0	3,525	15.3	.926
1.00 - 1.10	3	9.8	2,121	13.6	1.046
1.20 - 1.30	4	15.2	1,681	20.5	1.253
1.30 - 1.40	5	12.7	1,516	17.0	1.350
1.40 - 1.50	5	8.5	1,130	15.3	1.437
1.50 - 1.60	8	12.3	869	18.0	1.543
1.60 - 1.70	2	4.7	1,934	19.4	1.629
1.70 - 1.80	10	16.2	1,162	14.2	1.749
1.80 - 1.90	3	2.6	668	13.2	1.843
1.90 - 2.00	3	3.7	655	19.1	1.951
2.00 - 2.40	3	4.3	1,264	11.6	2.125
Totals	48	100.00	1,304	16.3	1.438

It may be observed from the above data that over 50 per cent (56.6%) of the total production for the month of November, 1933, was produced by approximately 41 per cent of the reporting mines at a total cost of less than $1.30 per ton, while in November, 1934 only 35 per cent of the total production as reported by 19 per cent of the reporting mines was produced within that cost range and 56.2 per cent of the total production reported by 40 per cent of the mines cost up to $1.50 per ton. The maximum range of costs during November 1933 was $1.50 per ton (from $ 80 to $2.30), while in November 1934 the range was $1.60 per ton (from $ .80 to $2.40). The average total cost per ton was slightly over 10 cents more in the latter than in the earlier month, about half of which is accounted for by increased labor costs.

Deep Mines. During the initial 5-month period an average of 35 reporting deep mines in Indiana produced 62.6 per cent of the coal mined by all reporting mines; in the succeeding 10 months an average of [illegible] mines produced 62.7 per cent. During these periods the mines worked an average of 19.0 days and 16.2 days per month, respectively, produced an average of 1,127 and 1,183 tons per day. The following is a tabulation of data with respect to deep mine operations alone.

Indiana Subdivision of Division II

Costs - Deep Mines only

	5-month, 8-hour-day period		10-month, 7-hour-day period	
	Costs per Ton	Per Cent of Total Cost	Costs per Ton	Per Cent of Total Cost
Mine Labor	$ .7530	54.31	$ .8825	55.75
Mine Supplies	.2759	19.89	.3336	20.35
Misc. and Fixed Charges	.2261	16.30	.2602	16.21
Production Cost	$1.2550	90.50	$1.4493	90.29
Selling and Administration	.1317	9.50	.1559	9.71
Total Cost	$1.3867	100.00	$1.6052	100.00
Average Days Worked per Month	19.0		16.2	
Average No. of Mines Reporting	35		29	
Average Daily Production per Mine	1,127		1,183	
Per Cent of Total Production	62.6		62.7	

These data indicate an increase in production cost of slightly more than 19 cents per ton and almost 22 cents increase in total cost, 11 cents of which is represented by increased labor costs. Undoubtedly a part of these increased costs during the 10-month period may be attributed to the summer operations which are normally higher in cost per ton, due to less continuous working time, than are peak season operations of

the winter months. The following calculation is designed to segregate roughly the increased costs due to fewer days worked, in two periods, from the increased cost due to other factors. The projection is based on variations that occurred in November 1933 costs and are not altogether applicable to costs extending over the longer period. It is believed, however, that they do serve to measure approximately the variations due to different working time.

Indiana Subdivision of Division II

Projection of Production Costs in 5-Month period from 19 Days to 16.2 Days per Month

Deep Lines

	Labor	Supplies	Fixed Charges	Production Cost
Costs on 16.2 Day Basis	$ .8165	$ .2952	$ .2406	$1.3523
Costs on 19.0 Day Basis	.7853	.2780	.2253	1.2886
Increase due to 2.8 Fewer Working Days	$ .0312	$ .0172	$ .0153	$ .0637
5-Month Costs on 19 Day Basis (1)	.7530	.2759	.2261	1.2550
Projected 5-month Costs on 16.2 Day Basis	$ .7842	$ .2931	$ .2414	$1.3187
10-mo. Costs on 16.2 Day Basis	.8625	.3286	.2602	1.4493
Increase of 10-mo. Costs over 5-mo. Costs (2)	$ .0783	$ .0335	$ .0188	$ .1306

(1) See preceding table
(2) Attributable to other factors than fewer working days per month.

These data allocate the increased costs of the 10-month period over those of the 5-month period as follows:

	Labor	Supplies	Fixed Charges	Production Cost
To Fewer Days Worked per Month	$ .0312	$ .0172	$ .0153	$ .0637
To other Factors	.0783	.0335	.0188	.1306
Cost Increases in 10-mo. over 5-mo. Period	$ .1095	$ .0507	$ .0341	$ .1943

These data indicate that the increased production costs of the later 10-month period due to the working day factor were a little more than 6 cents per ton, of which about 3 cents were labor costs. Two factors of opposing influence are present in these costs (1) a smaller number of days worked per month normally make for higher costs per ton, (2) a larger output per day tends to result in lower costs; to what extent these tendencies offset each other it is difficult to say. Their net effect would seem to substantiate the opinion that the 11-cent increase in labor cost is primarily due to the shorter day and increased hourly rate in the later 10-month period.

For the three months of November, December, and January of these two periods the average production costs for deep mines projected to comparable working day bases, were as follows:

Indiana Subdivision of Division II

Deep Mines

Month	Average Number of Days Worked	Average Production Costs	
		Projected Nov. 1933-Jan. 1934	Actual Nov. 1934-Jan. 1935
November	17.7	$1.3194	$1.3917
December	20.2	1.2571	1.3734
January	21.6	1.2015	1.2771
Total 3 Months	19.8	$1.2566	$1.3424

On a comparable working-day basis and for seasonally comparable periods the increase in production costs under the 7-hour day over those experienced under the 8-hour day were about 8¾ cents per ton. These data are perhaps more representative of the two periods of the Code than any of the other data shown, and the increase of 8¾ cents per ton in production cost represents, in all probability, the effective increase uninfluenced by working time, seasonal differences, and random interferences experienced in single months.

The following frequency distribution is presented in order to facilitate judgment as to the representative character of the average total costs in these two months.

Indiana Subdivision of Divioion II

Frequency Distribution of Total Costs

Deep Mines

November 1933

Costs per Ton Under	Number of Mines	Per Cent of Total Production	Average Daily Output per Mine	Average No. of Tipple Starts	Average Cost Per Ton
1.10 - 1.20	3	11.4	1,492	20.2	$ 1.183
1.20 - 1.30	9	31.4	1,441	19.2	1.250
1.30 - 1.40	5	6.0	599	16.1	1,352
1.40 - 1.50	8	18.7	964	19.3	1,461
1.50 - 1.60	6	17.2	1,270	17.2	1.548
1.60 - 1.80	3	6.7	842	21.0	1.675
1.80 - 1.90	2	6.8	1,696	16.0	1.855
2.10 - 2.30	2	1.8	334	20.9	2.183
Totals	38	100.0	1,115	18.8	1.426

November 1934

1.30 - 1.40	2	17.1	2,414	22.5	$1.247
1.40 - 1.50	4	18.7	1,600	18.7	1,325
1.50 - 1.60	2	8.0	1,460	17.6	1.456
1.60 - 1.70	7	15.3	731	19.1	1.550
1.70 - 1.80	2	7.5	1,230	19.4	1.629
1.80 - 1.90	8	22.9	1,236	14.7	1.748
1.90 - 2.00	2	3.4	845	12.9	1.840
2.00 - 2.20	3	7.1	896	16.3	2.011
Totals	30	100.0	1,204	17.7	$1.542

These data show that over two-thirds of the November 1933 tonnage was mined at a total cost of less than $1.50 per ton while in November 1934 the cost of a like proportion of the tonnage ran as high as $1.80 per ton. In the earlier month operations producing the greatest average volume per day fell into next to the highest cost interval while in November 1934 the largest average daily production was at the least cost.

Strip Mines: Strip mining by an average of 19 operators accounted for 37.4 per cent of the coal mined in the reporting operations in Indiana during the 5-month, 8-hour-day period from November 1933 through March 1934. In the succeeding 10 months, during which the miners worked 7 hours per day, these operations, as reported by an average of 17 mines, accounted for 37.3 per cent of the total. During these periods the mines, working an average of 15.3 and 13.0 days per month respectively, produced on the average 1,542 tons and 1,506 tons per mine per day.

Indiana Subdivision of Division II

Average Costs - Strip Mines

	5-month, 8-hour-day period		10-month, 7-hour-day period	
	Costs per ton	Per Cent of Total cost	Costs per ton	Per Cent of Total Cost
Mine Labor	$ .3575	32.45	$ .4785	34.73
Mine Supplies	.2596	23.56	.3593	26.08
Misc. & Fixed Charges	.3312	30.07	.3474	25.21
Production Cost	$ .9483	86.08	$1.1852	86.02
Selling & Administration	.1534	13.92	.1926	13.98
Total Cost	$1.1017	100.00	$1.3778	100.00
Average Days Worked per Month	15.3		13.0	
Average No. of Mines Reporting	19		17	
Average Daily Production per Mine	1,542		1,506	
Per Cent of Total Production	37.4		37.3	

These data show an increase in production cost of nearly 24 cents per ton for the 7-hour day over the 8-hour day period while the total costs increased nearly 28 cents per ton. About half of the increase in production cost is attributable to increased labor costs. The operations during these periods appear fairly comparable except for the factor of seasonality. A portion of the increased costs of the latter period may be accounted for by the higher-cost off-peak operations of the summer months.

These unfavorable working conditions inflated labor costs about 5 cents per ton. The apparent increase of some 27 cents in total costs for the 10-month period over those of the 5-month period cannot be said to be the true change in comparable costs for the following reasons, (1) in the second period the mines worked 2.3 fewer days per month, on the average, than in the first, (2) 19 mines reported in the first period while only 17 mines reported in the second and there is no assurance that they were 17 of the 19 reporting in the earlier months. The samples may be quite different as to costs, working days, or output per day, and (3) average daily output per mine was 36 tons less in the 10-month than in the 5-month period. An approximate adjustment may be made for the fewer working days per month by projecting the 13 day production costs to a 15.3 day basis. The result of this projection, the procedure of which is

outlined in this chapter, Section C-1, shows the following:

Indiana Subdivision of Division II

Projection of Production Costs in 5-Month Period from 15.3 Days to 13.0 days per Mo.

Strip Mines

	Labor	Supplies	Fixed Charges	Production Cost
13.0-Day Basis	.4024	.2973	.3840	1.0837
15.3-Day Basis	.3557	.2767	.3424	.9748
Increase due to 2.3 Fewer Working Days	.0467	.0206	.0416	.1089
5-month, 15-3 Day Costs (1)	.3575	.2596	.3312	.9483
Projected 5-month costs on 13-Day Basis	.4042	.2802	.3728	1.0572
10-month costs on 13-Day Basis	.4785	.3593	.3474	1.1852
Increase of 10-month Period (2)	.0743	.0791	.0254 (*)	.1280

(*) Decrease (1) See preceding table (2) Attributable to other factors than fewer working days

From the above projection, which furnishes a rough approximation of the costs in the 5-month period had the average number of working days been 13.0 instead of 15.3, it appears that the production cost increased about 13 cents and consequently attributes about 11 cents to 2.3 fewer days worked. On the same basis about 5 cents increase in labor costs are attributed to fewer working days and 2 cents to the fewer hours per day. Although no data are available for projecting selling and administration expenses per ton to a fewer number of days, it is certain that there are some fixed costs in these categories that become less per ton as the total tonnage increases. It is probable that had the miners worked an average of 13 days in the 5-month period instead of 15.3 days the selling and administration expenses would have been around 17 cents per ton instead of 15 cents as actually reported. Based on this assumption the total average costs for the 5-month period would have been $1.23 per ton as compared with $1.38 in the 10-month period, an increase of about 15 cents per ton, and the percentage that each element would have borne to the total would have provided the following comparisons.

	5-Month Period	10-Month Period
Per Cent of Labor to Total	32.94	34.73
Per Cent of Supplies to Total	22.83	26.08
Per Cent of Fixed Charges to Total	30.38	25.21
Per Cent of Production to Total	86.15	86.02
Per Cent of Selling & Administration to Total	13.85	13.98

With an equal number of working days and a relatively uniform daily average output per mine, labor costs increased, due principally to the higher hourly rate, about 7 cents per ton in November 1934 over November 1933, and at the same time because a more significant constituent of total costs. It is significant to observe, at this point, that labor costs consitute a greater proportion of total costs in deep mines than in strip mine operations, due to the relatively greater use of machine, such as steam shovels, in the latter type of mine. (For detailed discussion of relative importance of cost items, see Section D of this chapter).

Costs for single months, however, are subject to variations that are local to short periods. The following data for seasonally comparable periods of 3 months, projected to equal working time, avoids some of these difficulties and may, therefore, be considered as a truer measure of the representative increase in production costs under the 7-hour day over those of the 8-hour day period.

Indiana Subdivision of Division II

Strip Mines

Month	Average Number of Days Worked	Average Production Costs Projected Nov. 1933-Jan. 1934	Average Production Costs Actual Nov. 1934-Jan. 1935
November	14.3	$1.0061 (*)	$1.1046
December	17.7	.8941	1.0008
January	17.8	.8281	1.0862
Total 3 Months	49.8	$ .9034	$1.0617

(*) Actual

These data attribute nearly 16 cents per ton as the average increase in production costs during the 7-hour day period over the production costs under the 8-hour day.

From the following frequency tabulation of mines operating at 10-cent cost intervals, it is observed that over half of the tonnage reported in both November 1933 and November 1934 was mined at a total cost of less than $1.10 per ton.

November 1933

Costs per Ton Under	Number of Mines	Per Cent of Total Production	Average Daily Output per Mine	Average No. of Tipple Starts	Average Total Cost per Ton
$ .80 - 1.10	6	55.2	2,714	14.6	$ 1.007
1.10 - 1.20	4	21.8	1,537	15.3	1.120
1.20 - 1.30	2	5.2	930	12.0	1.257
1.30 - 1.40	2	6.5	642	21.9	1,381
1.40 - 1.70	5	3.5	435	11.6	1.518
1.90 - 2.00	2	5.1	1,063	10.2	1.976
2.10 - 2.30	2	2.7	564	10.3	2.219
Totals	21	100.0	1,435	14.3	1.169

November 1934

$ .80 - 1.00	2	26.8	3,326	15.3	$ .926
1.00 - 1.10	3	26.2	2,121	15.6	1.046
1.20 - 1.40	3	14.5	1,292	14.2	1.289
1.40 - 1.60	4	16.6	1,142	13.8	1.457
1.70 - 1.80	2	5.1	860	11.3	1.754
1.80 - 2.00	2	6.9	606	21.7	1.900
2.20 - 2.40	2	3.9	1,086	6.8	2,296
Totals	18	100.0	1,475	14.3	1.261

11. Illinois Subdivision of Division II. (In 1934 this Subdivision produced 11.41 per cent of the U. S. total, according to the U. S. Bureau of Mines preliminary estimate.) (*)

Deep and Strip Mines. An average of 114 deep and strip mines reported total costs for the 5-months' period November 1933 through March 1934. During this period the mines worked 8 hours per day and an average of 16.5 days per month with costs averaging $1.369 per ton. For the succeeding 10 months, during which an average of 103 mines reported, the average total cost increased to $1.553 per ton. During this later period the miners worked only 7 hours per day and an average of 14.6 days per month. This increase in total cost may be the net result of several new factors operating in the second period with different effects, among which were: (1) a larger representative of the higher-cost deep mines in the first period (88 per cent and 85 per cent respectively) producing a smaller output per day, (2) a larger representation of high-cost off-peak seasonal operations, (3) smaller monthly

(*) U. S. Bureau of Mines, W.C.R. 919, February 15, 1935

output per mine which tends to increase the fixed charges per ton, and (4) an increase in the wage rate per ton. The following tabulation presents the salient data with regard to costs and the factors effecting them for the two periods.

Illinois Subdivision of Division II

Average Costs - Deep and Strip Mines

	5-month, 8-hour-day period		10-month, 7-hour-day period	
	Costs per Ton	Per Cent of Total Cost	Costs per Ton	Per Cent of Total Cost
Mine Labor	$ .7754	56.63	$ .8663	55.78
Mine Supplies	.2388	17.45	.2793	17.98
Misc. & Fixed Charges	.2186	15.97	.2362	15.21
Production Cost	$1.2328	90.05	$1.3818	88.97
Selling & Administration	.1362	9.95	.1713	11.03
Total Cost	$1.3690	100.00	$1.5531	100.00
Average Days Worked Per Mine	16.5		14.6	
Average No. of Mines Reporting	114		103	
Average Daily Production per Mine	1,746		1,746	
Per Cent of Deep Mine Production	83.8		81.7	

The mines included in these two periods represent quite different samples of the industry in this Subdivision, the average number of mines reporting in the first period being 114 with an average number of days worked per month of 16.5 while in the second period 103 mines reported an average of 14.6 days per month. The daily rate of production per mine was the same for both samples. The average costs per ton in the second period were generally higher than those in the first; labor costs about 9 cents, supplies about 4 cents, fixed charges 2 cents, making a total of 15 cents per ton increase in production costs. Selling and administrative costs increase about 3.5 cents, making total costs approximately 18½ cents per ton higher during the 7-hour per day than in the earlier 8-hour per day period.

The following data show the average production costs of both deep and strip operations for seasonally comparable 3-month periods during which the mines operated 8 hours per day and 7 hours per day, respectively. The costs have been projected to equal working days per month and are as representative of the effective average production costs as are obtainable.

Illinois Subdivision of Division II

Deep and Strip Mines

Month	Average Number of Days Worked	Average Production Costs	
		Projected Nov. 1933-Jan. 1934	Actual Nov. 1934-Jan. 1935
November	15.4	$ 1.2535	$ 1.4133
December	19.5	1.1957	1.3334
January	20.5	1.1774	1.3218
Total 3 Months	55.4	$ 1.2041	$ 1.3505

About 14.6 cents per ton appears to have been the average increase in production costs of the 7-hour per day period over those of the 8-hour per day period.

A frequency distribution of the total costs per ton for two months is presented in the following tabulation:

Illinois Subdivision of Division II

Frequency Distribution of Total Costs-Deep and Strip Mines

December 1933

Costs per Ton Under	Number of Mines	Per Cent of Total Production	Average Daily Output per Mine	Average No. of Tipple Starts	Average Total Cost per Ton
$ .70 - .90	4	3.5	1,536	13.9	$ .803
.90 -1.00	3	2.4	1,478	13.0	.980
1.00 -1.10	6	6.0	1,526	21.7	1.066
1.10 -1.20	10	12.1	2,173	18.3	1.143
1.20 -1.30	15	9.9	1,301	16.7	1.232
1.30 -1.40	18	18.1	1,712	19.4	1.338
1.40 -1.50	19	14.4	1,527	16.4	1.454
1.50 -1.60	15	16.9	2,739	13.6	1.532
1.60 -1.70	15	8.2	1,217	14.8	1,632
1.70 -1.80	8	4.6	1,026	18.3	1.761
1.80 -2.00	3	1.0	899	11.8	1.891
2.00 -2.10	5	1.8	555	21.9	2.039
2.30 - over 2.50	4	1.1	997	9.0	2.689
Totals	125	100.0	1,582	16.7	1.386

December 1934

$ .90 -1.10	3	3.6	2,431	19.0	$ .964
1.10 -1.20	8	11.3	2,587	21.1	1.159
1.20 -1.30	11	10.5	1,616	22.8	1.245
1.30 -1.40	16	13.7	1,683	19.6	1.352
1.40 -1.50	14	18.9	2,097	18.3	1.445
1.50 -1.60	17	12.7	1,399	20.6	1.549
1.60 -1.70	8	7.0	1,935	17.5	1.639
1.70 -1.80	18	13.6	1,498	19.5	1.735
1.80 -1.90	4	1.5	650	22.3	1.855
1.90 -2.00	6	3.3	1,391	15.1	1.921
2.00 -2.10	2	0.3	394	14.4	2.072
2.10 -2.20	2	1.4	1,114	24.6	2.154
2.20 -2.40	3	1.2	1,028	15.1	2.259
2.50 and over	5	1.0	351	22.2	2.765
Totals	122	100.0	1,619	19.5	1.485

This exhibit shows that over half of the tonnage in December 1933 was produced and sold at an average total cost of less than $1.40 per ton; in December 1934 a like proportion of the coal produced had a total cost up to nearly $1.50. The distribution of large daily producers shows no particular tendency to center around the low cost brackets in either of the two months for which data are above presented - there does seem to be some evidence that the highest cost mines were low in daily output, especially in December 1933.

Deep Mines. During the initial 5-month, 8-hour-day period beginning November 1933, an average of 100 deep mines reported an average of 16.5 days per month at an average output of 1,672 tons per day. In the succeeding 10 months during which the 7-hour day was in effect, an average of 88 deep mines reported working time of 14.3 days per month and an average daily output of 1,710 tons. The average per ton cost data for these periods are tabulated in the following table.

Illinois Subdivision of Division II

Average Costs - Deep Mines

	5-month, 8-hour-day period		10-month, 7-hour-day period	
	Costs per Ton	Per Cent of Total Cost	Costs per Ton	Per Cent of Total Cost
Mine Labor	$ .8583	60.22	$ .9632	59.51
Mine Supplies	.2339	16.41	.2689	16.62
Misc. & Fixed Charges	.2018	14.16	.2197	13.57
Production Cost	$1.2940	90.79	$1.4518	89.70
Selling & Administration	.1312	9.21	.1666	10.30
Total Cost	$1.4252	100.00	$1.6184	100.00
Average Days Worked Per Mine		16.5		14.3
Average No. of Mines Reporting		100.0		88
Average Daily Production Per Mine		1,672		1,710
Per Cent of Total Production		83.8		81.7

From these data it appears that the average production cost per ton increased about 16 cents in the later period over the earlier. Labor costs averaged about 10 cents higher, mine supplies about 3½ cents higher, and fixed production costs about 2 cents, making up the total increase in production costs of nearly 16 cents per ton; to this should

be added about 3½ cents per ton increase in selling and administration cost, making a total increase of nearly 19½ cents per ton in the cost of producing and selling coal under the 7-hour day over that of the 8-hour day period. These costs, however, were reported by quite different samples of the industry and under quite different seasonal conditions. As pointed out above, 100 mines reported in the earlier period while only 88 reported in the later one, their average daily production was not comparable, and the mines worked, on the average over two days less in the second than in the first period. Some of these variations in the samples may be partly overcome by selecting certain months or periods of like seasonal characteristics and by projecting costs to the basis of an equal number of working days for the periods to be compared. It must be emphasized, however, that those adjustments only roughly approximate comparability in certain particulars and may introduce new factors making for incomparability in other particulars. Assuming that variations in the costs for different numbers of working days in November 1933 are characteristic of like variations in costs for the entire 5-month period November 1933 - March 1934, the following tabulation shows the increases in production costs of the 7-hour-day period over that of the 8-hour-day.

Illinois Subdivision of Division II
Projection of Production Costs in 5-Month Period from 16.5 Days per Month to 14.6 Days

Deep Mines

	Labor	Supplies	Fixed Charges	Production Cost
Costs on 14.6 day basis (Nov., 1933)	$ .8670	$ .2680	$ .2211	$ 1.3561
Costs on 16.5 day basis (Nov. 1933)	.8472	.2613	.2077	1.3162
Increase due to 1.9 fewer days	.0198	.0067	.0134	.0399
Add. costs on 16.5 day basis (1)	.8583	.2339	.2018	1.2940
Projected costs on 14.6 day basis (5 months)	$ .8781	$ .2406	$ .2152	$ 1.3339
Costs on 14.6 day basis (10 months)	.9632	.2689	.2197	1.4518
Increase of 10-month period over 5-month (2)	$ .0851	$ .0283	$ .0045	$ .1179

(1) See preceding Table.
(2) Attributable to other factors than fewer working days.

The above calculations would seem to attribute about ¼ of the 16 cent increase in production cost to other factors than fewer working days, and about 12 cents of the increase to other factors.

Further illumination on the costs as reported by deep mines for these periods may be had from analyses of costs reported in seasonally comparable months in these two periods.

It is doubtful whether the influence of usually higher-cost summer operations can be even approximately segregated by comparing the costs of particular months of the two periods which are seasonally comparable. Too many other factors, such as poor mining conditions within the mines, etc., may be introduced in any one month which tend to become diffused when spread over a longer period. Only by close scrutiny of average costs in combinations over several months and in separate similar months adjusted as well as may be for factors that are not comparable, together with frequency distributions of the costs in small cost intervals, can an appreciation be had of the effect of cost changes in the two periods before and after Amendment No. 1 became effective.

A comparison of production costs on the basis of equal number of working days for 3 months of the 5-month, 8-hour-day period with those for the 3 corresponding months under the 7-hour period follows:

Illinois Subdivision of Division II

Deep Mines

Month	Average Number of Days Worked	Average Production Cost Projected Nov.1933-Jan.1934	Average Production Cost Actual Nov.1934-Jan.1935
November	15.0	$1.3415	$1.4779
December	19.4	1.2620	1.3869
January	20.3	1.2491	1.3739
Total 3 Months	54.7	$1.2777	$1.4061

These data would seem to justify the conclusion that the increase in comparable production costs of deep mine operations during the 7-hour day period over those of the 8-hour day period were almost 13 cents per ton.

The following frequency distribution of average total costs for December 1933 and December 1934 is given to complement the tabulation of average costs:

Illinois Subdivision of Division II

Frequency Distribution of Total Costs - Deep Mines

December 1933

Costs per Ton Under	Number of Mines	Per Cent of Total Production	Average Daily Output per Mine	Average No. of Tipple Starts	Average Total Cost per Ton
$ .80 - 1.00	3	1.9	829	21.4	$ .944
1.00 - 1.10	5	5.9	1,496	22.1	1.063
1.10 - 1.20	6	8.3	1,878	20.4	1.165
1.20 - 1.30	12	9.4	1,226	17.8	1.227
1.30 - 1.40	17	18.5	1,616	18.7	1.344
1.40 - 1.50	18	16.2	1,483	16.8	1.453
1.50 - 1.60	15	20.1	2,739	13.6	1.532
1.60 - 1.70	15	9.7	1,217	14.8	1.632
1.70 - 1.80	8	5.4	1,026	18.3	1.761
1.80 - 2.00	3	1.1	899	11.8	1.891
2.00 - 2.10	5	2.2	555	21.9	2.039
2.30 - over 2.50	4	1.3	997	9.0	2.688
Totals	111	100.0	1,506	16.6	$1.439

December 1934

$1.10 - 1.20	5	8.8	2,716	21.0	$1.165
1.20 - 1.30	9	9.9	1,580	22.8	1.247
1.30 - 1.40	13	12.1	1,534	19.7	1.350
1.40 - 1.50	17	20.3	2,140	18.2	1.443
1.50 - 1.60	17	15.0	1,399	20.6	1.549
1.60 - 1.70	8	8.3	1,935	17.5	1.639
1.70 - 1.80	17	15.2	1,515	19.3	1.735
1.80 - 1.90	4	1.8	650	22.3	1.855
1.90 - 2.00	6	3.9	1,391	15.1	1.921
2.00 - 2.10	2	0.4	392	14.4	2.072
2.10 - 2.20	2	1.7	1,114	24.6	2.154
2.20 - 2.40	3	1.4	1,028	15.1	2.259
2.50 and over	5	1.2	351	22.2	2.765
Totals	108	100.0	1,555	19.4	1.532

From this table it is to be observed that nearly half (44%) of the December 1933 tonnage was produced and sold at a total cost of less than $1.40 per ton, while in December 1934 only 30 per cent of the tonnage was produced and sold within that cost. The entire range of costs extended from 80 cents to over $2.50 per ton in December 1933 and in December 1934 from $1.10 to over $2.50 per ton. The largest group, in terms of tonnage, was produced at an average of $1.532 in December 1933 and at $1.443 in December 1934.

Strip Mines. During the 5-month period from November 1933 through March 1934, in which the 8-hour day was in effect, an average of 14 mines, working 16.9 days per month produced an average of 2,261 tons per month; in the succeeding 10 months, working 7 hours per day and an average of 16 days per month, 15 mines reported an average production of 2,000 tons per day. The following tabulation presents pertinent average cost and operating data for these two periods:

Illinois Subdivision of Division II

Average Costs - Strip Mines

	5-month, 8-hour-day period		10-month, 7-hour-day period	
	Costs per Ton	Per Cent of Total Cost	Costs per Ton	Per Cent of Total Cost
Mine Labor	$ .3463	32.11	$ .4332	34.36
Mine Supplies	.2642	24.50	.3256	25.82
Misc. & Fixed Charges	.3057	28.35	.3099	24.57
Production Cost	$ .9162	84.96	1,0687	84.75
Selling & Administration	.1622	15.04	.1922	15.25
Total Cost	$1.0784	100.00	$1,2609	100.00
Average Days Worked per Mine	16.9		16.0	
Average No. of Mines Reporting	14		15	
Average Daily Production per Mine	2,261		2,000	
Per Cent of Total Production	16.2		18.3	

These data, which are fairly comparable as to working days per month and as to number of mines reporting, show rather marked increases in the several items of cost per ton. Labor cost, for example, shows an increase of more than 8½ cents per ton under the 7-hour day over the 8-hour day costs, over 6 cents more per ton for supplies, and less than half a cent increase in fixed production costs. These increases aggregate over 15 cents increased production costs, to which were added 3 cents increase in selling and administration costs, making total average costs 18¼ higher in the second than in the first period. Much of this, of course, was due to the shorter working day - some of it can undoubtedly be attributed to slightly fewer working days per month, some to conditions lessening the average daily output per mine, a portion to the off-season production in the latter period, while the effect of a different group of reporting mines cannot be estimated. The constituent elements of cost changed very little in their relation to the total cost.

Attention is called to the relatively small proportion of labor to total cost in strip mining as compared with deep mine operations. Here we find labor constituting a little over 30 per cent of total cost while in deep mines this item generally averages 60 per cent or more. The data presented in this table lack comparability as to average number of days worked per month.

The following tabulation shows the average production costs of strip mine operations during 3 corresponding months in the 8-hour and the 7-hour day periods. Besides being seasonally comparable, the data for November 1934-January 1935 have been projected to the same average number of working days as were reported in the November 1933-January 1934 period.

Illinois Subdivision of Division II

Strip Mines

Month	Average Number of Days Worked	Average Production Cost Projected Nov.1933-Jan.1934	Actual Nov.1934-Jan.1935
November	17.5	$ .8837	$1.1016
December	20.3	.8494	1.0426
January	21.7	.8141	1.0332
Total 3 Months	59.5	$ .8468	$1.0564

These data indicate that during the 7-hour day period the production costs of strip mines increased nearly 21 cents over the costs reported during the 8-hour per day period. This is perhaps the best measure of the increase in operating costs that is available.

The following frequency distribution of mines and production at 10-cent cost intervals is made from average costs unadjusted for differing days worked per month.

Illinois Subdivision of Division II

Frequency Distribution of Total Costs - Strip Mines

December 1933

Costs per Ton Under	Number of Mines	Per Cent of Total Production	Average Daily Output per Mine	Average No. of Tipple Starts	Average Total Cost per Ton
$ .70 - .90	2	18.5	2,432	19.3	$ .792
.90 - 1.10	3	15.6	1,659	16.8	1.013
1.10 - 1.20	4	32.3	2,615	16.0	1.113
1.20 - 1.30	3	12.5	1,600	13.5	1.254
1.30 - 1.50	2	21.1	2,826	19.3	1.340
Totals	14	100.0	2,191	16.9	$1.103

December 1934

$ .90 - 1.10	3	23.0	2,431	19.0	$ .964
1.10 - 1.20	3	25.1	2,372	21.2	1.148
1.20 - 1.30	2	13.5	1,779	22.8	1.239
1.30 - 1.40	3	22.3	2,330	19.2	1.360
1.40 - 1.80	3	16.1	1,556	20.7	1.552
Totals	14	100.0	2,116	20.3	$1.230

From the above it is to be observed that 66.4 per cent of the December 1933 output of strip mines in Illinois was produced at a total cost of less than $1.20 per ton, while in December 1934, 61.6 per cent of the total output was at a total cost up to $1.20 per ton. This indicates that the principal increase in average total cost for the Subdivision occurred among the higher cost mines.

12. Iowa Subdivision of Division II. (In 1934 Iowa produced .93 per cent of the U. S. total, according to the preliminary estimate of the U. S. Bureau of Mines.) (*)

Cost data for this Subdivision were not completely reported throughout the period of the operation of the N.R.A. Code, and for that reason Iowa is not included in the data heretofore presented in this chapter under the caption Division II. Statistics, sufficiently comprehensive for publication, were received for deep and for strip mines in November 1933 and for deep mines in December 1933. Average costs for these periods are tabulated on the following page.

(*) U. S. Bureau of Mines, W.C.R. 919, February 15, 1935

Iowa Subdivision of Division II

Average Costs per Ton

	November 1933				December 1933			
	Deep and Strip		Strip		Deep		Deep	
	Costs	Per Cent of Total	Costs	Per Cent of Total	Costs	Per Cent of Total	Costs	Per Cent of Total
Mine Labor	$1.4650	65.84	.9348	46.10	$1.5161	67.56	$1.4473	68.53
Mine Supplies	.2607	11.72	.4710	23.23	.2404	10.71	.2267	10.73
Misc.& Fixed Charges	.3578	15.18	.4446	21.93	.3275	14.59	.2944	13.94
Prod.Cost	$2.0635	92.73	1.8504	91.26	$2.0840	92.86	$1.9684	93.20
Selling & Administration	.1617	7.27	.1772	8.74	.1602	7.14	.1436	6.80
								100.00
Total Cost	$2.2252	100.00	$2.0276	100.00	$2.2442	100.00	$2.1120	100.00
No. of Mines Reporting	28		3		25		25	
Average Days Worked	15.4		8.4		16.1		18.0	
Average Mines' Daily Production	463		698		453		476	

All of these data are based on 8-hour day operations, no reports being tabulated for operations under the 7-hour day. It is of importance to note that labor costs under strip mine operations constitute a somewhat larger proportion of total costs in Iowa than in either Indiana or Illinois. Both production and total costs run higher as a rule in Iowa, partly because of more difficult mining conditions and partly because of the smaller size of typical operations.

13. Subdivisions of Division III. Division III was not subdivided for Code Administration purposes, consequently no discussion of Subdivisional statistics is here presented. A discussion of the costs of this Division is made earlier in this chapter.

14. Southwestern Subdivision of Division IV. (In 1934 this Subdivision produced 1.62 per cent of the U.S. total according to the preliminary estimate of the U. S. Bureau of Mines.) (*)

The coals mined in this Subdivision are of bituminous rank, a large proportion of which are recovered by strip-mine operations; in fact this section has been a pioneer in the development of large scale strip

(*) U.S. Bureau of Mines W.C.R. 919, February 15, 1935

mining methods and equipment. About two-thirds of all the coal produced in Division IV come from this Subdivision. Table 82 shows the average costs reported for this Subdivision during the 5 months beginning November 1933. An average of 44 mines reported working time of only 14 days per month during this period, and an average production of about 640 tons per day. The production costs, in these 5 months, ranged from an average of $1.3757 per ton to $1.4882, averaging $1.4371 for the entire period. Total costs averaged $1.6483 per ton for the 5-month period.

15. Arkansas and Eastern Oklahoma Subdivision of Division IV. (In 1934 this Subdivision produced .63 per cent of the U.S. total according to the preliminary estimate of the U.S. Bureau of Mines.) (*)

The coals of this Subdivision are generally of a higher grade than those mined in the other sections of Division IV. Most of the coal is of bituminous rank, although some from the eastern portion is of a semi-bituminous rank. Deep mining is the principal type of operations and the daily output per mine averaged about 352 tons for the months from November 1933 through February 1934. An average of 18 mines reported about 8½ working days per month for this period, and their average production costs ranged from $2.4175 per ton in February 1934 to $2.7939 in November 1933, an average of $2.5818 for the 4 months. Total costs averaged $2.9063 per ton for the period. Table 91 presents pertinent cost and operating data for this Subdivision.

16. Northern Wyoming District of Division V. (In 1934 this District produced .22 per cent of the U. S. total according to the preliminary estimate of the U. S. Bureau of Mines.) (**)

The coals mined in this District range from low-rank sub-bituminous to high-rank bituminous. Reports from only 4 or 5 mines were received by N.R.A. for the 5 months of November and December 1933 and January, February, and March 1934, they reported an average of as few as 9.8 working days in March and a high of 16.8 days in November - an average of about 12 days per month for the period. The average daily output per mine for the period was slightly less than 1,000 tons at an average production cost of $1.3862, and a total cost of $1.5392 per ton. This State is reported to contain the greatest unmined tonnage of any state in the Union, the seams running as high as 90 feet in thickness. Cost and other operating data for the commercial mines in this District are given in Table 97, appended to this Chapter.

17. Southern Wyoming District of Division V. (In 1934 this District produced .99 per cent of the U.S. total according to the preliminary estimate of the U. S. Bureau of Mines.) (***)

(*) U. S. Bureau of Mines W.C.R. 919, February 15, 1935
(**) U. S. Bureau of Mines W.C.R. 919, February 15, 1935
(***) U. S. Bureau of Mines W.C.R. 919, February 15, 1935

The coal in this District ranks from sub-bituminous to high grade bituminous, but much of it has been under such heavy cover that its future commercial development is doubtful. The seams range in thickness from less than 2 feet in the Rock Springs Field to 34 feet in the Hanna Field. During the last two months of 1933 and the first two months of 1934, 10 mines reported to N.R.A. an average of 14.4 working days per month and a daily production of about 700 tons per mine. This production cost per ton as reported averaged $1.81 and the total cost $2.05, of which labor constituted about 50 per cent. Operating data for this District may be found in Table 98.

18. Montana District of Division V. (In 1934 this District produced .73 per cent of the U. S. total according to the preliminary estimate of the U. S. Bureau of Mines.) (*)

The coals in this District rank from lignite to semi-anthracite. The poorer grades are found mostly in the Great Plains Areas while the better grades are in or near the mountains. Because of the great irregularity in the coal bearing strata many small individual coal fields exist, and the mining costs are high. Most of the mines are captive and much of the coal is used for railroad fuel. Commercial mines, for the most part, serve local markets and are in competition with natural gas. Operating data and costs for commercial mines are exhibited in Table 99, appended to this chapter. These data are from five or six mines which reported an average of 11 working days per month for the 5 months beginning November 1933. Their production costs range from $1.56 in December 1933 to $1.85 in March 1934, with an average of $1.65 per ton for the period. Total costs averaged $1.91 for the same period. Four mines reported for April 1934 while operating under the 7-hour per day schedule. No appreciable change in costs can be detected because of this change in working time. The basic day rates remained unchanged, but hourly rates were adjusted. Labor cost, nevertheless, constituted a smaller proportion of total costs than in the preceding month under an 8-hour day.

19. Central New Mexico District of Division V. (In 1934 this District produced .16 per cent of the U. S. total, according to the preliminary estimate of the U. S. Bureau of Mines.) (*)

The coals in this District rank from sub-bituminous to anthracite, but the seams are discontinuous and thick partings are frequent. The production costs in this District are high, for the 6 months beginning November 1933, compared to those reported by other Code areas. Labor costs increased 21 cents per ton in April 1934, over the previous 5 months' average, but averaged about the same as they were for March in spite of the fact that wage rates increased and the 7-hour day was substituted for the 8-hour day. Production costs and total costs, however, were higher after the Amendment became effective, due principally to increases in Fixed Charges and Selling and Administrative costs. Table 100 shows the per ton costs and other operating data for this District from November 1933 through April 1934.

20. Utah District of Division V. (In 1934 this District produced .67 per cent of the U.S. total according to the preliminary estimate of the U. S. Bureau of Mines.) (*)

(*) U. S. Bureau of Mines W.C.R. 919, February 15, 1935

Most of the coal mined in this District is of bituminous and sub-bituminous rank, and is suitable for railroad, industrial and domestic use. Reports were received for 5 months under the 8-hour day schedule and for April 1934, the first month during which the 7-hour day was in effect. No change in day rates of pay were authorized in Amendment No. 1 for this District. No appreciable increase in costs can be detected, but the reporting mines numbered only 9 in April as against an average of 16 mines for the 5 months beginning November 1933. Production cost for the 5-month period varied from an average of $1.73 in December 1933 to $2.11 in February 1934, with an average of $1.82½ for the period. Table 101 summarizes the cost and operating data received for months of November 1933 through April 1934.

21. Washington District of Division V. (In 1934 this District produced .39 per cent of the U. S. total according to the preliminary estimate of the U. S. Bureau of Mines.) (*)

The commercially mined coals in this District are for the most part bituminous or sub-bituminous in rank. Most of the active operations are in the central portion of the state west of the Cascades. The coals from this District compete in the domestic market with wood and "hog-fuel" while in the industrial market electric power is an important competitor. Wage rates paid under the Code were among the highest in the country and were not changed in Amendment No. 1 except as the fewer hours per day correspondingly increased hourly rates. Labor costs constituted over 60 per cent of the total costs in contrast to around 50 per cent in other Districts of this Division. Pertinent cost and other operating data for the 6 months beginning November 1933 may be found in Table 102.

22. North Dakota Strip Mines District of Division V. (In 1934 this District produced .49 per cent of the U. S. total, according to the preliminary estimate of the U. S. Bureau of Mines.) (*)

All of the coal mined in this District ranks as lignite. The seams range from a few inches to 40 feet in thickness; they vary greatly and may either thin out and disappear or thicken and be split into several beds by clay seams and partings. These lignites as mined contain a high percentage of moisture which if evaporated too rapidly causes the fuel to disintegrate or slack into fine sizes. The market must of necessity be largely local in character because of the unstable composition of the coal. Characteristic of stripping operations, the average production cost in this District for the 4-month period beginning November 1933 is very low, ranging from $ .78 in January 1934 to $ .91 in November 1933, an average of $ .83 for the 4 months. Selling and Administrative costs averaged about $ .16, making an average total cost of $ .99. Only 6 mines reported in each of the 4 months; their average working time was nearly 20 days per months and the average daily output was 1,046 tons per mine. Cost and operating data for this Division are found in Table 103.

23. Northern Colorado District of Division V. (In 1934 this District produced .64 per cent of the U. S. total according to the preliminary estimate of the U. S. Bureau of Mines.) (*)

(*) U. S. Bureau of Mines W.C.R. 919, February 15, 1935

This field is known as the Northern Colorado "Lignite" field. The coals produced are for the most part of bituminous and sub-bituminous ranks. Denver, Boulder, and other local consuming areas constitute the principal markets outside of railroad fuel. Production costs during the 5 months prior to the adoption of Amendment No. 1 averaged $1.38½ and the costs for individual months showed little variation from this average. During this period an average of 30 mines reported average working time of almost 21 days per month at a daily rate of 551 tons per mine. During the succeeding 3 months an average of about one-half this number of mines reported about 15 days worked per month. Their costs ran considerably higher, ranging from $1.94 per ton to $2.17. Among the items of cost that increased were labor (from $1.12 to around $1.37 per ton), Fixed charges (from $.33 to about $.40 per ton), and Selling and Administration (from $ .17 to over $ .30 per ton). Some of these increases are undoubtedly due to the higher wage rate per day that became effective with the adoption of Amendment No. 1, some to generally higher prices of supplies and a portion at least may be the result of a materially different sample of reporting mines and the fewer days worked per month. Cost and other operating data for this District may be found in Table 104.

24. Southern Colorado District of Division V. (In 1934 this Division produced .99 per cent of the U. S. total according to the preliminary estimate of the U. S. Bureau of Mines.) (*)

In this District are found coals ranking from anthracite to sub-bituminous; most of the coal, however, is of bituminous rank. The markets for these coals are mostly local, although the anthracite from the Crested Butte field is marketed over a wide area. Much of the coal is used for railroad fuel. The mines in this District made sufficiently complete reports to N.R.A. for publication for only 4 months' operations during the 8-hour day period. The production cost for this period averaged $2.12½ cents per ton, $1.30 of which was mine labor. No data were reported while operating under Amendment No. 1 when the day-rates of pay were considerably increased. From 26 to 36 mines (average 33) reported an average of 10.6 working days per month for the 4 months at an average daily production of about 641 tons per mine. Other relevant cost and operating data for this District are found in Table 105.

G. Cost Increases Recapitulated.

There are shown in the opening section of this chapter estimated increases in cost brought about by the effectuation of the Code beginning October 2, 1933. The 7-hour day and 35-hour week, with the accompanying increases in wage scales under Amendment 1, effected another upswing in costs, which have been estimated throughout the preceding discussion for each Subdivision, after removing the seasonality or working-day factor.

These estimated increases may be summarized and averaged as follows on a basis which removes the unequal weighting due to various percentages of representation among the cost reports received from the different Subdivisions (see Section B of this chapter for detailed showing of these percentages of representation). To accomplish the weighting for this purpose, the increases in cost have been applied to the total commercial

(*) U. S. Bureau of Mines W.C.R. 919, February 15, 1935.

production of each Subdivision as reported by the Bureau of Mines and the Division averages weighted thereon. Divisions IV and V cannot be treated in this manner because their reporting did not continue beyond the first four or five months of the Code period.

Bituminous Coal. Minimum Increase in Cost Under N.R.A. Code, in 5 Months of the 8-Hour Day Period, November 1933 -March 1934: in the 10 Months of the 7-Hour Day Period April 1934 - January 1935; and Total Increase, estimated from Cost Reports covering these Months.

	Estimated Increase in Cost			Commercial Production 8/	
	8-Hour Day Period; Dec. over May 1933 something more than 1/	7-Hour Day Period over 8-Hour Day Period, about	Total Increase Under Code something more than	5 Mos. Nov. 1933-March 1934	10 Mos. April 1934 Jan. 1935
	(1)	(2)	(3) Col.1 + Col.2	(4)	(5)
				Thousands of Tons	
Eastern Pennsylvania	.264	.290	.554	14,521	24,184
Western Pennsylvania	.379	.250	.629	16,818	30,087
Ohio	.305	.205	.510	8,983	14,214
Panhandle	5/	.142	5/	1,582	2,690
Michigan	5/	5/	5/	335	478
Northern West Virginia	.293	.280	.573	8,692	12,953
DIVISION I - NORTH	.316 2/	.255 2/	.571 2/	50,931	84,606
Southern Subdiv. No. 1	5/	.290	5/	17,836	33,689
Southern Subdiv. No.2	.328	.240	.568	27,139	54,111
Maryland & Upper Pot.	.434	.290	.724	1,248	1,927
DIVISION I -SOUTH	.333 3/	.260 3/	.593 3/	46,223	89,727
TOTAL DIVISION I	.322	.258	.580 3/	97,154	174,333
Indiana	-	.16	.16	7,613	11,725
Illinois	-	.174	.174	18,820	29,699
TOTAL DIVISION II	-	.170 4/	.170	26,433	41,424
TOTAL DIVISION III	.383	.350 6/	.733	3,262	4,701
GRAND TOTAL DIVISIONS I, II, III	5/	.243 7/	5/	126,849	220,458

1/ This is the increase in labor cost only; see Section A this chapter.
2/ Excluding those areas noted as "not available".
3/ Excluding Western Kentucky and those areas noted as "not available."
4/ Excluding Iowa. (Notes continued on following page)

This showing is inconclusive mainly due to lack of completeness in the basic measuring data for the first period. As to Division I, it is safe to say that the increase in costs during the 8-hour day period as compared, say with the first three quarters of 1933, averaged considerably more than the 32 cents shown, due to increases in other costs than labor; and by the same token the over-all increase for the entire Code period was probably at least 65 cents. There is no data available in N.R.A. for computing the right figure.

Division II generally experienced no increase directly due to wage scales and hours established by the Code in October 1933. The existing scale under contracts still in effect became the basic rates for Illinois and Indiana under the Code. The overall effect of the Code on costs in this Division is probably understated in the table, rather than overstated.

Division III costs showed almost 75 cents a ton increase during the Code period.

(Notes continued from preceding page.)

5/ Not available

6/ Cost figures in 7-hour day period cover 9 months April through December 1934.

7/ Excluding Western Kentucky, Iowa, and those areas marked "not available".

8/ From Bureau of Mines, total production minus production of 100% captive mines.

CHAPTER VI 1/

PRICES UNDER THE CODE

The stabilization of the bituminous coal industry contemplated under the Code was, to a large degree, dependent on the success of the price structure to be set up. This was clearly realized by operators and labor. One need only survey the downward trend of prices following 1923 for an explanation as to why price conditions were considered of vital importance.

Under the Code, the set-up for prices consisted of a detailed mechanism, largely experimental, since it was established upon short notice and with little precedent, and hence was subject to many changes. Records are not complete on all phases of its operation, and time prevents a thorough discussion of its detail. Therefore, part of the text may appear incomplete, though attempt is made to give a consecutive story of main events during the period of the Code. Because of the length of this section, the major parts are listed below in their proper order.

A. Original Code Price Provisions.
B. Administration of Prices.
C. Factors in Bituminous Coal Prices.
D. Establishment of Prices.
E. The Price Structures.
F. Problems in Price Control.
G. The National Coal Board of Arbitration.
H. Realization under the Code.
I. Summary.

A. Original Code Price Provisions: Article VI contained the price and marketing provisions of the original Bituminous Coal Code. The general principles of price fixing were prescribed in Section I of Article VI, wherein it was stated that, "The selling of coal under a fair market price (necessary to carry out the purposes of the National Industrial Recovery Act, to pay the minimum rates herein established, and to furnish employment for labor) is hereby declared to be an unfair competitive practice and in violation of the Code"

No definite measures or standards were given in the Code as to what constituted a "fair market price", though the methods for establishing prices were given description. Section 2 of Article VI provided that minimum prices for the various grades and sizes may be established for future application by a marketing agency or agencies which are representative of at least two-thirds of the commercial tonnage of any coal district or groups of districts. Code Authorities were to exercise the power of establishing prices where no marketing agency existed. Marketing agencies were required to report their prices to the Code Authorities. In Section 4, it was said that the prices established should be published within 15 days after effective date of the Code, after approval by the proper Presidential Member, who in his approval might permit a reduction or increase in the prices within limits which he might specify. It was provided that prices be published when any changes were made

1/ Prepared by George A. Lamb.

therein, but not less frequently than once each month and on the first day of the month. Prices were to be submitted to the Administrator for his review and subsequent action.

By Section 5, Article VI, the records and data of marketing agencies, and of the Code Authorities, were open to inspection and investigation by any agent of the Administrator. Changes proposed by such an agent after his investigation were not to be effective until approved by the Administrator.

Sections 6 to 18, inclusive, defined unfair trade practices. Coal exported, outside of bunker fuel, was not included in the price and trade provisions.

In addition to the failure to set up standards for establishing fair market prices, it will be seen that the Code had no measure prescribing the manner in which joint action between Code Authorities was to be carried on, or as to how controversies between Code Authorities were to be handled. These three factors, particularly the joint action and settlement of controversies, became severe obstacles to the operation of the Code.

B. Administration of Prices: The original Code permitted marketing agencies to establish prices under rules and regulations of their respective Code Authorities. Provision was made for the Code Authorities to establish prices for areas not represented by marketing agencies. Prices were to be approved by the Presidential Member before their publication, and also submitted to the Administrator for review and any further action. While prices originated generally with the marketing agencies, the price administrative machinery centered around the Code Authorities, with the Presidential Member and Administrator exercising review functions.

Each Code Authority had its own by-laws and these usually contained a detailed procedure in respect to prices. Specialized committees were set up, each with specified duties, such as on prices, on classification, and on marketing practices. Procedures were instituted for carrying on the work between marketing agencies and Code Authorities. Generally some provision was made for handling complaints made by Code Members on prices and classifications.

A weakness in the Code until January 1935 was in regard to relations between Code Authorities. As the Code was written, and as Code Authorities were quick to accept, prices and classifications were taken as intra-Code Authority matters. This placed a severe handicap on Code operations, and on several occasions threatened the entire Code set-up.

Division I had a Divisional Code Authority and 9 Subdivisional Code Authorities. The latter were in competition with one another in at least some markets and, as a result, disputes were bound to arise. Yet, the Code had no provision that treated such difficulties. The Divisional Code Authority, an agency that one would expect to act on controversies, was considered of secondary importance since its powers were conferred by Subdivisional Authorities, and thus it could do little

more than encourage coordination between Subdivisions. The same problem was true for other Divisions that had Subdivisions, except Division III where there were no Subdivisional Authorities. No better arrangement existed for proceedings or disputes between Divisions.

Neither did the Code make specific provisions so that the Administrator could deal effectively with Code Authority disputes. The Administrator and Presidential appointee had authority to approve or disapprove prices and practices, and the Presidential appointee could change prices within certain limits, but neither could initiate action as to settling controversies.

It was soon evident after prices were first established that some method had to be employed to smooth out the relations between Code Authorities. This resulted in committees being appointed by Code Authorities. For instance, Eastern Subdivision in its by-laws, made provision for handling inter-Code Authority disputes through a committee to be appointed by the Code Authorities, with decision by a two-thirds vote. Voluntary action of this kind was often unsuccessful since the committees, composed of members representing particular interests, found trouble in reaching a common understanding. Sometimes a committee of impartial members was set up, but such an agency, with no authority, often had its findings disregarded. One agency that had some degree of success in handling price controversies was the Joint Marketing Committee of Division I. This Committee, established in the spring of 1934, held formal meetings on price disputes, and in some cases reached a decision that was generally accepted. By the summer of 1934, the Joint Marketing Committee recognized it was unable to cope with all the price controversies, and it suggested that the Presidential Members of Division I meet as a board and render decisions to the Administrator on cases not settled by the Committee. (Letter to Administrator from Joint Marketing Committee, June 25, 1934.) The Committee and the Presidential Board of Review more or less worked together on the cases. The Board did not attain the success desired. In January 1935, the Code was amended (Amendment No. 6) to amplify the price sections and to provide for a National Coal Board of Arbitration.

C. Factors in Bituminous Coal Prices: Before entering into the actual Code prices and the problems connected therewith, it seems well to consider the various factors connected with the make-up of bituminous coal prices.

The Price Level

The physical supply of bituminous coal is unlimited for all practical purposes. In Chapter IV and elsewhere, the excess capacity of the industry has been given full description. In addition, there are several other noticeable characteristics that appear in connection with the production and disposal of coal. The coal industry has its product already existing, except for some possible preparation, and requires only mining and transportation to market. This is quite unlike other industries where the production activities include fabrication or processing. Because of this, coal can be sold "in the ground", i.e., before it is mined, and this is a customary practice. In other

industries, production is based often on anticipated sales. Coal is not stored at the mines, aside from resultant sizes that sometimes pile up; and is not sent to market to await a sale, unless one considers the relatively small amounts in the retail yards and at the docks. Neither is coal stored to any great extent by consumers, partly because of custom and partly because of costs, and again because users know their requirements can be obtained upon short notice. This is in contrast to many other commodities that are stored prior to sale. In summary, bituminous coal is an industry with an excessive capacity, with a product already existing, with production often based on sales already made, and with sales largely according to current needs.

The demand for coal is generally said to be inelastic. Several elements seem to support this contention. Bituminous coal in many cases is a necessity to the extent that other fuels cannot be easily substituted. Equipment installed to burn coal cannot be economically changed to oil and gas furnaces where the prices of the different fuels hold somewhat to past relationships. A second point favoring inelasticity is that the cost of coal is often only a small part of the consumer's production costs. Figures are not available to justify accurately this point, though some approximation may be obtained from the Fifteenth Census of the United States -- Manufactures, 1929, wherein it is shown that total "fuel and energy purchased" amounted to 2.6 per cent of the value of all manufactured products, and 5.9 per cent of value added to products. It is to be noted that "fuel and energy purchased" includes all kinds of fuel as well as energy so that the proportion of bituminous coal would be considerably less. If it can be assumed from the above that bituminous coal is but a small item in manufacturing costs, then it can be accepted that manufacturers will purchase coal as they need it since even a sizeable increase in price would change their costs but little. For other industries, bituminous coal represents a larger item in costs but, likewise, an important necessity. In 1929, coal purchased by Class I Railroads represented 6.7 per cent of their total railway operating expenses. (Statistics of Railways, 1929, I.C.C.) While a 15 or 20 per cent increase in coal prices would not affect railway operating expenses a great deal, even a larger increase would not convert all railroads to another fuel or energy because of the difficulties involved in such a substitution. Information is not complete regarding fuel substitution or the costs of fuel to total production costs, but it is apparent that these two factors influence the consumers' demand for bituminous coal and account for elasticity at least to some degree.

The effects of the various factors related to the sale of coal under conditions of free enterprise brings into consideration the history of the industry for the decade prior to the Code. With an unlimited tonnage available, the markets were potentially flooded with coal, causing the price to be determined by the interaction of factors on the supply side. This was a period in which the buyers could sit back and enjoy the cut-throat activity between producers. The object of producers was to outsell each other, and seek what economies they could so that costs would at least be covered. This meant a continual down pull on the price level and attempts to lower costs. Labor, the largest item in mining costs, and more flexible than others, was

pressured in the economy adjusting process, causing much disorder between labor and producer. (See testimony of Mr. Charles O'Neill before District Supreme Court, Carter Coal Case, Print p. 346-7.)

From 1923 to 1932, the trend of the price level was continually downward. The losses suffered by the industry during this period are indicated in Chapter I, showing that the economies effected were not sufficient to overcome the depressed price level. In other works, the level at which coal was actually sold was below the cost level.

An opposite condition will be found for earlier years. In 1920, a year of car shortage, the price level averaged $3.75 per ton. Average monthly spot prices for this year advanced to a high of $9.51 per ton, and instances occurred where individual prices were twice as high. See Chapter I. Experiences in high coal prices before 1923 offer much support to the inelastic nature often attributed to the demand for coal. It is to be recalled that before 1923, many outside influences, such as car shortages, war conditions and strikes, had much to do with coal prices, and it was not until after the disappearance of those influences that the factors of supply and marketing could show their full importance.

Particular Prices

The bituminous coal price problem becomes more complicated when the question of individual prices for sizes and kinds of coal are brought into consideration.

Much of the difficulty in respect to particular prices appears because the industry is largely one of joint costs. Coal is usually sold according to certain sizes but it cannot be mined by size with one exception, namely the "Mine Run" specification. Numerous sizes must be prepared by the industry to supply the requirements of the consumers. While the preparation of the coal is usually a simple process, the prices for the different sizes may vary a great deal. The joint nature of the product appears since none of the "sized" specifications can be produced without some resultant remaining. For instance 6" lump cannot be prepared without coal of lesser size resulting therefrom. This makes it impossible to allocate costs to the different kinds of preparation, and the importance given to each may vary greatly between producers.

Another complication is that what may be a resultant size to one mine may be a major product to another. Thus, a mine in one region may specialize in steam coal while a mine in another region may largely sell prepared sizes. The producer of steam coal naturally attempts to get rid of his resultant at any price, and in doing so he may directly compete with the producer of prepared sizes. An opposite situation will appear when the producer of prepared sizes attempts to sell his resultant.

Much price trouble has appeared because of the qualtities of coals of particular districts. Coals may vary a great deal in make-up according to the districts where they are mined. The classification of

coals by rank starts with anthracite, and then continues through the different kinds of bituminous, the kinds of sub-bituminous; and the kinds of lignite. (See report of Sectional Committee on Classification of Coals, 37th Annual Meeting of Americacan Society for Testing Materials, 1934.) But in addition, there are coals of numerous make-ups within each rank, and it is this variation that gives rise to complications in the market. Part of this coal variation may be determined by chemical analysis; that is, it is possible to measure moisture, sulphur, ash, fixed carbon, volatile matter, heat content and fusibility; elements that describe part of the qualities of a coal. The value of chemical analysis, of course, depends on how widely it is used, the extent to which producers accept the results of each other, and how well it is followed by consumers. Then, again, there are certain elements, such as friability, grindability, free burning, coking and caking which are related to the performance of a coal in its different uses. It is said these elements can be judged only through the experience of producers and consumers, and it is probably for that reason that they are often spoken of as intangible elements. With all these many variations existing in the character of coals, it is easy to see the complications that would arise in a common market when producers compete under terms of free enterprise.

Sales have often been made for the purpose of keeping mines in operation. It is claimed to be a better practice to run a mine by selling coal at some price as against leaving it idle and undergoing the costs of pumping together with certain overhead items. (See Testimony of Mr. Charles O'Neill, before District Supreme Court, Carter Coal Case, Print p. 347.) It is also probably true that producers have sold coal at a relatively low price rather than lose a customer. The policy of keeping a mine running regardless of price becomes of serious consequence in an industry like bituminous coal where an excess capacity prevails.

The peculiar nature of the factors related to coal prices furnish a key to the causes that depressed the industry after 1923. They clearly indicate the obstacles appearing in the marketing procedure, and suggest the handicaps of the industry in its attempts to operate under free enterprise. They point to the need of regulation in the industry but, at the same time, the complications connected with such regulation.

D. Establishment of Prices: The Code prescribed no definite standards as to how the original prices were to be established. Aside from the general provision that prices were to be fair and at the same time sufficient to carry out the purposes of the Act, Article VI 2 (c) specified that Code Authorities shall utilize the classification of coals as a basis for determining the fair market price. Classification was to be effected by marketing agencies except, in districts where agencies were not organized, the Code Authorities were instructed to classify the coals. The Code Authorities were also to classify coals not sold by marketing agencies of any district. In addition to these conditions, a fair market price and classification, the Code allowed consideration to be given to competitive fuels and energy in the determination of prices.

Although these price provisions are rather vague, their significance is apparent upon further consideration. In the first place, a fair market price, one to carry out the intents of the Code, required that costs be covered and that protection be given against unlimited price cutting. To satisfy these conditions, the composite mine price would have to equal or exceed costs, meaning that both mine costs and sales realization would have to be known. Also, a minimum price was necessary. In the second place, the classification rule instructed that proper price relationships be established for the coals of each district. This rule required that price differentials be set up for mines which would give measurement to variation in the quality of their coals.

Difficulties in Setting Up Initial Prices: The obstacles faced in the early price procedure are easily realized when it is recalled that little data were available on the subject. Uniform cost accounting had not been followed by operators, and the records available lacked uniformity and completeness. Data on costs and prices, particularly the latter, had been considered a private matter and were held as confidential. When the Code became effective, Article VII, Section 3 permitted Code Authorities to collect necessary data and, while this allowed entrance to certain files, it was not possible within the limited time to organize statistical bureaus which could collect and compile all the statistics needed.

A reason for the lack of information on costs, prices and marketing, was that the bituminous coal industry had never been organized extensively. It is true that operator associations existed in most of the producing districts, but these were concerned mostly with local matters, such as wage disputes, and their activities were seldom extended to the more general problems. (The National Coal Association, on January 27, 1936, listed 53 local operator associations, and it is said that most of these operated before the N.R.A.) The first important agency to deal directly with coal prices and marketing was organized only shortly before the Code. This was the Appalachian Coals Inc., which began operations in 1933.

In form, Appalachian Coals was a cooperative marketing agency, with its stockholders consisting of operators located within defined areas. The member operators entered into a contract whereby the agency would have exclusive right to the sale of their coal, except as to outstanding contracts, coal used at the mines, and coal sold to employees. (Appalachian Coals, Inc., et al. vs. United States, 288, U.S. 344.) Appalachian Coals, soon after organization, included the majority of producers of high volatile coal in Eastern Kentucky, Tennessee, Virginia and West Virginia, and accounted for three-fourths of the production in this territory by the early part of 1935. (Ibid) The agency at that time represented 11 per cent of the production east of the Mississippi River. Functions of Appalachian Coals were to seek better methods of distribution, advertise intensively, to eliminate unfair trade practices, and to carry on market research. While Appalachian Coals was in no position to dominate market prices, it was able to bring order in respect to its operators, and it did collect a large amount of market information. With the legality of Appalachian Coals confirmed by the Supreme Court in March, 1935, certain doubts were

eliminated as to the Anti-Trust laws, and cooperative marketing was stimulated generally. Nothern Coals, representing various Ohio districts, began to function in June, 1933. In September, Hocking Coals, Inc., an organization for Southern Ohio fields, began operations. Greater progress in cooperative marketing would probably have been experienced in the summer of 1933 had not attention been directed to Code formulation. Of the three selling agencies organized prior to the Code, Appalachian Coals was the only one in a position to be helpful in the establishing of Code prices, since neither Ohio Coals nor Hocking Coals, Inc., had been operating long enough to assemble any great amount of information. Appalachian Coals was a valuable aid to the organization and operation of Southern Subdivision No. 2, the Code Authority for the southern high volatile region; and furnished a pattern for other Code organizations.

The most complete information available on costs and prices of the industry at the time of Code organization was published by Government agencies. These data, of course, had to be released in such a way as not to reveal information on any particular company and, in consequence, many of the important statistics on costs and prices had to be excluded. For instance, the Bureau of Mines had data on realization, i.e. the composite prices, by states and counties, and by years. This agency was unable, however, to obtain information on the actual prices for kinds and sizes, nor was it able to compile a complete summary of prices in any market. The most recent and complete information on mine costs in 1933 was the Census which, for 1929, had data by states, and by counties that produced over 100,000 tons for the year. The value of these statistics was mostly in the form of showing the importance of individual cost items rather than as a basis of a cost level, since costs had changed noticeably after 1929.

Even had more data been available on costs and prices, difficulties would still have been faced in setting up the Code prices. There was the problem of adjusting prices according to the proposed wage advances, and other cost increases that were beginning to appear. Then, again, there was the problem of contracts. A large tonnage was under contract at relatively low pre-Code prices, and the contracts were to continue through the Code until their expiration. It is said that many operators estimated after a survey of conditions, that the price level would have to be somewhere around $2.00 per ton and, no doubt, many kept this figure in mind when establishing prices.

Classification of Coals: The classification of coals introduced additional complexities to the price fixing process. Coals within a district, or even between adjacent mines, may vary greatly in market quality. As a result, coals mined under similar conditions may take different prices in consuming markets or for certain uses. It was specified in the Code that the various coals be classified so that recognition be given to the marketability of the different kinds.

Classification implies that consideration be given to consumer demand which by nature is an evasive factor. It consists of numerous variable elements and many that are unknown. There are, however, measurements for certain characteristics of a coal which form a general basis for burning requirements. These are obtained by a chemical

analysis. Moisture, sulphur, ash, fusibility, phosphorus, fixed carbon, volatile matter and heat content may be definitely weighted through an analysis of this kind. (Material on chemical analysis is taken largely from "Keystone Coal Buyers Manual", 1935. Suggestions also obtained from "Preliminary Classification of Coal for Code Authority of Western Pennsylvania", 1934; "Price-Fixing in the Bituminous Coal Industry", Stephen P. Burke, 1935; Brief, Eastern Subdivision, Docket 13, N.C.B.A.; and "The Appalachian", Appalachian Coals Inc., June 1935.)

The characteristics measured through a chemical analysis may be described as follows:

Moisture - All coals contain moisture, varying from 1 per cent in certain parts of the Appalachians to 40 per cent in the lignite of Texas. Coals may also have some surface moisture due to washing or rain, particularly in the case of fine sizes, but much of this may disappear under favorable atmospheric conditions. Usually part of the natural moisture is lost in shipment. Moisture in coal must be evaporated before combustion can occur, requiring part of the heat liberated from the coal.

Sulphur - This may range from 0.5 to 8 per cent, and sometimes more. Sulphur has some heating value, and in some cases is a source for sulphuric acid, but is objectionable to certain uses when it combines with other bases to form clinkers.

Ash - This is the incombustible remainder after coal is burned. Ash has no fuel value, requires freight charges along with the coal, may form clinkers, and requires extra labor as to furnace cleaning.

Fusibility - This is the heat required to cause remaining ash to form clinkers. It is said that ash with a fusing temperature of 2100 deg. F., will not only become melted in most fireboxes, but will be heated beyond the melting point and run over the grate area to form a thin sheet.

Phosphorus - The amount of phosphorus in coals was important when steel was made by the Bessemer process, since it adversely affected the product, but as steel is now processed mostly by other methods the importance of low phosphorus in coal has decreased.

Fixed Carbon - Roughly this is the remainder after moisture, volatile matter and ash have been eliminated. It has a high heat value, and it is said the best chance to obtain full heat value is generally when fixed carbon represents between 77 and 81 per cent of coal.

Volatile Matter - This consists mainly of the combustible gases in the coals, some of which produce more heat than any other part of the coal. The heat obtained depends on the make-up of the gases, and the manner in which the coal is burned. For example, high volatile coal thrown in large quantities on a fire produces smoke because gases are expelled so rapidly they cannot unite with oxygen of the air, leaving carbon to issue from the stack as smoke. Much of the heat content

is lost under such conditions. The term "high volatile" is usually connected with coals having over 28 per cent in volatile matter; "medium volatile" refers to coals having from 21 to 28 per cent in volatile matter; and "low volatile" refers to coals with 20 per cent or less in volatile matter.

Heat Value - This is expressed in British thermal units, i.e., the quantity of heat required to raise one pound of water, at 62 degrees F., through 1 degree F.

The importance of the chemical make-up varies according to the type of user. For almost any consumer, coals are objectionable when they contain extreme amounts of moisture, sulphur and ash. Smoke ordinances may prompt users to give attention to volatile content. For many users, the relation of the properties of a coal to each other are highly important, and the chemical measurements are considered directly when purchases are made. Coals of a given ash or sulphur content may be useless for certain purposes, while a low fusibility may hinder burning in some furnaces. Volatile requirements for efficient burning in fireboxes are often known. Coals required by particular users may come only from a single field, and some coals are relatively scarce. The nature of the chemical properties will sometimes measure the efficiency of coals as well as their usability, and for those reasons a chemical analysis alone may be responsible for the higher price on one coal as against another. As an example of how chemical properties are given consideration, the base specifications of the United States Navy on bunker coal are shown below:

Volatile Matter	15 - 23%
Ash	3 - 5
Sulphur, less than	1.5
Fixed Carbon	71 - 79
B.T.U. about	14,700

(Keystone Coal Buyers Manual 1935, p. 50, quoted from circular of Information, U.S.N. Paymaster General.)

Measurement through chemical analysis may furnish only one set of specifications as to the marketability of coals. There are other characteristics which are not subject to any definite measurements, and which operators often speak of as intangibles. These intangible qualities are known to exist because coals giving similar results under a chemical analysis will sometimes vary in market price. Recognized among the intangibles are friability, grindability, free burning, coking, and caking.

Friability - The extent to which a coal is subject to crumbling and breaking down. Friable coals will more easily lose their size make-up when handled, and often give large quantities of extreme fines which may contribute to clinker formation in some furnaces. Again, friable coals may lose uniformity in their size more easily, a condition that may hinder combustion in many fireboxes.

Grindability - This is how well coals are adapted to crushing.

Some coals are useless in this respect. The comparative advantages of grindable coals are related largely to the type of burning equipment and nature of plant.

Free Burning - This indicates an absence of coking qualities, indicating that free burning coals will not readily fuse together when burning, giving fine sizes little resistance as to being blown out the tubes. Stokers are used, however, which eliminate much of the trouble with free burning coals.

Coking - While volatile matter, sulphur and other qualities subject to measurement are important, the complete value of a coal to coking is often found only after experiment. This is due to certain characteristics of the gases of coals as well as the type of plant. Sometimes different coals are mixed for coking purposes.

Caking - This refers to the action of various coals, with coking properties, that fuse together when burning, and cause combustion difficulties under certain conditions.

Intangible characteristics, like the chemical properties, have an importance according to the application of coal in various uses. Few are in agreement as to how the intangibles should be measured. One authority states that, on the average, intangibles should have a weight of one-third as against a weight of two-thirds for the chemical measurements. (Brief, Eastern Subdivision, Docket 13 - N.C.B.A.) A study of market prices over a period would probably give some indication of price differentials for kinds of coal and the weight of intangibles. These data were often not available for the months prior to the Code, and even were prices obtainable they would, in many cases, be distorted because of the cut-throat competition that had prevailed in the industry.

Occasionally a special classification is established for certain types of buyers. For example, it has been the practice of railroads to pay a fixed price for coals of a given preparation of particular mines. These large buyers fail to recognize price differentials based on a chemical analysis and other consideration when coals are relatively similar in character. The railroads can obtain like results from coals that may vary some in physical make-up, whereas other users may find a noticeable change in efficiency due to slight differences in sulphur, ash, or other properties. Because of this and the fact that the railroads are large buyers, railway fuel is usually given a special classification.

The task of the marketing agencies and Code Authorities was to consider the marketability of the numerous coals in light of their chemical and intangible qualities, and to rate the individual mines accordingly. Little emphasis need be given to the magnitude of such a work. It should be stated, however, that there had been little experiences in classification, while chemical analyses were not in existence for all mines. Few operators could agree on classification standards. Much of the classification work was on an arbitrary basis, and a great deal of dissatisfaction resulted. (See Bulletin, National

Coal Association, November 10 and 20, 1933.) Mines were grouped in a few, or maybe as many as a dozen classes, causing certain operators to complain of their position on the classification schedule.

Setting up the Initial Prices: Information is meagre on the methods employed in setting up the original Code prices. A survey of early price schedules and related information suggests that the marketing agencies and Code Authorities resorted to various means in formulating the price schedules. Generally, the first step was to set up a minimum mine price. Some were not clear as to whether the price for any size or kind of coal could be quoted below the average cost. Sometimes the minimum mine prices varied according to several market zones. Maximum freight absorptions were often allowed on all or certain sizes of coal. Mines were not classified in all cases. It was known that the first prices failed to conform in all cases to all the Code requirements but, at the same time, prices had to be established. This was done with the understanding that the schedules were temporary and would be improved upon, especially when price information was more complete.

An actual picture of early price methods may be obtained for one Subdivision. (Brief Eastern Subdivision, Docket 13 - N.C.B.A.) It is stated that this Subdivision, before fixing prices in September 1933, determined the average cost of producing coal for mines in its territory. The method of figuring costs is not described. Next, a study was made of market prices over a period of a year to ascertain the average differences in price of the lowest grade group of coals as compared with the highest grade group. This amounted to 50 cents per ton. Intermediate coals were then grouped in 5-cent steps between the low and high grade coal, using the average cost as the value of the lowest grade coal. The range of price was checked against a chemical analysis, and against prices filed by producers of Central Pennsylvania that had operated under the Code of Fair Trade Practices, a code that had required prices to be changed with a central authority and no change to be made without notice.

By October 14, 1933, price schedules had been approved by the Administrator for Divisions III and V. Prices for Subdivisions of Division I had been given temporary approval, but prices for Divisions II and IV were still due. (Bulletin of National Coal Association, October 14, 1933.) By the end of October, all prices were approved, except for Western Kentucky. Tentative approval was given to Illinois and Indiana prices because of the conflicts between these Subdivisions. (Bulletin of National Coal Association, November 4, 1933.)

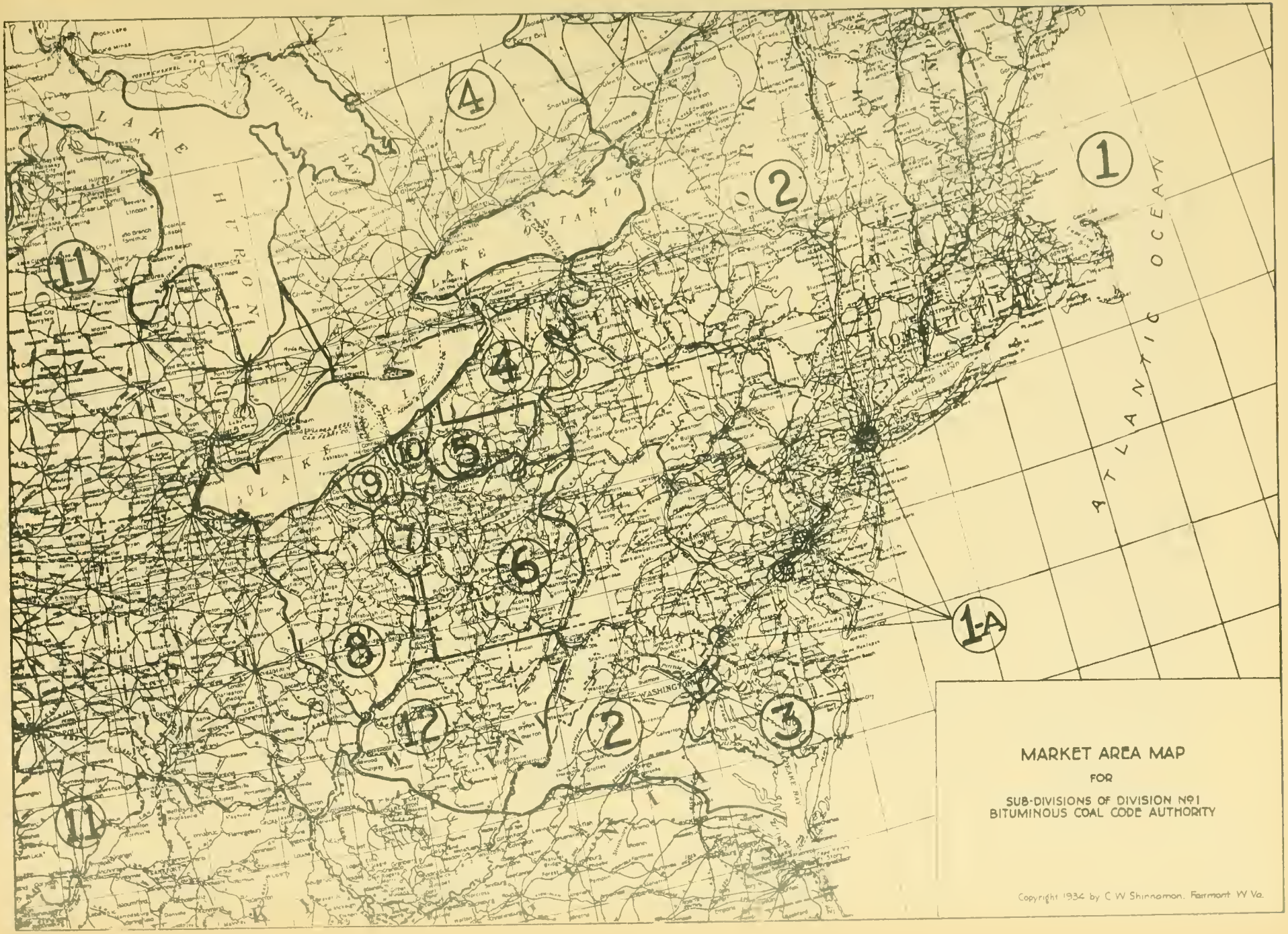
The procedure of having schedules published with minimum prices effective for the future caused a rigidity in prices not customary for the bituminous coal industry. Some operators found the minimum prices too high to permit them to continue in certain old markets,

while others were bitter as to the mine classification they received. (Black Diamond, Vol. 91, December 23, 1933, p. 34.) Freight rate absorptions were allowed sometimes to permit more flexibility. (Hearing before Presidential Member, Butler-Mercer controversy, Western Pennsylvania Code Authority, June 13, 1934.) The method of quoting early prices f.o.b. mine, and the allowance of a maximum freight absorption, generally made the actual prices in any market difficult to determine and left room for abuse in trade practices. The Administration early stated the Code meant that prices should be established for consuming markets. (See Conference of Producers of Division II, Western Kentucky, and Eastern Representatives, December 7, 1933, Washington, D. C., p. 25.) This really included two things: first, that coals have a definite price for each market, which would exclude variable freight absorptions; and second, that prices of Divisions and Subdivisions be correlated in the markets. It was also through the Administration that activity was early directed towards the establishment of common marketing areas.

E. The Price Structures: The price structures underwent considerable change during the Code period. One of the first modifications was the establishment of prices by markets as compared with early attempts at varrying mine prices and maximum freight absorptions, both of which had caused a great deal of confusion. By the Spring of 1934, the majority of the price schedules had prices by markets, while maximum freight absorptions were being used less and less. Market price areas began to appear early in 1934, and became general by Summer. In the late Spring of 1934, more activity was turned towards the relationships of prices of competing Subdivisions in markets and, after this time, the price patterns showed a larger amount of correlation. The numerous price controversies appearing the Summer of 1934 were largely concerned with correlation matters, of which classification was the more important.

Price areas proved to be convenient in the setting up of market prices. A price area consisted of one or a group of consuming points for which specified prices applied as to the kinds and sizes of coal of a given district. Information is not found in regard to considerations taken into account in the establishment of the areas, but apparent in their make-up are conditions such as the customary markets of mining districts, peculiar characteristics of certain markets, and freight differentials to be absorbed. At first, the areas were set up by particular Sub-divisions, but later areas were agreed upon between Subdivisions. On July 1, 1934, the Subdivisions of Division I jointly established the price areas shown in the accompanying map. Price areas were used by nearly all the Subdivisions during the second half of the Code.

Due to lack of time and other conditions, it is necessary to resort to a few simple illustrations of the price structures instead of the detailed treatment as originally planned.


LAKE SUPERIOR
LAKE HURON
LAKE ERIE
LAKE ONTARIO
ATLANTIC OCEAN
1
1-A
2
3
4
5
6
7
8
9
10
11
12
MARKET AREA MAP
FOR
SUB-DIVISIONS OF DIVISION No 1
BITUMINOUS COAL CODE AUTHORITY
Copyright 1934 by C W Shinnamon, Fairmont W Va.

The table below is taken from a price schedule of the Ohio Subdivision, and is typical of the price set-ups found during the later half of the Code period. It is only one part of the price schedule, the other parts including separate price quotations for each of the following: railroad fuel, bunker fuel, lake coal, truck sales; and sections on rules, regulations and information as to the application of the prices. Prices in the accompanying table are for all coal except that covered in the separate quotations described above.

Market areas, corresponding to the designations on the Market Area Map, are shown in the first column of the Ohio schedule. Classifications are included under the title, "Origin Mine Groups." The other columns on the table are for the different sizes of coal. It will be seen that prices are quoted according to four designations: by market areas, by classifications, by producing districts, and by sizes.

Price variations by market areas may be measured by taking one classification and several sizes. For instance, on Mine Run, mines in Group I had a price of $1.95 for consuming points in Areas 5, 10, and 11; $2.00 in Areas 1 to 4 inclusive, and Area 6; and $2.05 in Areas 7, 8 and 9. Lump 5" and larger did not have the same market differentials. Market Areas 4 and 11 had the lowest price, $2.40, with a spread of 20 cents to Areas 8 and 9, the markets taking the highest prices.

Classification differentials varied both by Market Areas and sizes of coal. In Market Area 8, classifications B and E took the same price on Mine Run, but a differential of 10 cents between the two is noted for Market Area 11. On 5" Lump, the difference between Class B and Class F amounted to 15 cents when for Area 11. Differentials between the producing groups are readily apparent.

A larger spread is found for the differentials between the sizes of coal. In Market Area 8, for example, Group I mines had a price of $2.60 on 5" Lump and a price of $1.75 on Slack 3/4" and under, a difference of 85 cents.

The table: "Prices at Chicago" affords an example of comparative market prices under the Code. It is a comparison of the prices on the highest class of Mine Run of the selected districts, each of which sells in Chicago. A wide variety of coals are found between some of the districts, which is indicated in the price differentials.

Northern Illinois, which is located nearest Chicago, is used as a base in the comparisons. It will be seen that Central Illinois and the Indiana districts, with the exception of Evansville, had a delivered price of 70 cents above Northern Illinois. Southern Illinois and Western Kentucky each had a differential of $1.20, and the districts of Southern #8 had differentials of $2.24 and $2.39. The low volatile coal of Southern #1 had a delivered price of $3.59, or $2.79 over Northern Illinois.

SUB-DIVISIONAL COAL CODE AUTHORITY FOR OHIO

Price Schedule No. 6 — "All Other Coal"

Minimum fair market prices, per net ton f. o. b. mines, from all Origin Mine Groups into all Market Areas

(Prices in this schedule apply to all Ohio coals other than those specifically stated elsewhere in Price Schedule No. 6)

MARKET AREAS

For detailed description of the various uniform Market Areas, see Pages 19 to 22 inclusive of Price Schedule No. 6.

ORIGIN MINE GROUPS

Group 1. Includes all mines in No. 8 and Cambridge Districts, exclusive of Groups 2 and 3.

Group 1W. Applies to coal washed or partially washed from the No. 8 District.

Group 2. Applies to Piney Fork No. 2 Mine, (No. 8 District), Jefferson Coal Company.

Group 3. Nelms Mine (No. 8 District)—O. & P. Coal Company, when consigned to retail yards. When not so consigned, Group 1 will apply.

Group 4. All mines in Berghols District, including Wainwright Mine of Ohio Block Coal Company, when consigned to retail yards for domestic use (for steam use, see Group 5).

Group 5. All mines north of the No. 8 and Cambridge Districts, generally known as the Middle and Coshocton Districts, for domestic and steam use.

All Berghols District mines, including Wainwright Mine of Ohio Block Coal Company, for steam use (for domestic use, see Group 4).

Group 6. All mines in the entire coal fields of Southern Ohio, generally known as the Hocking, Pomeroy, Jackson, Crooksville and Shawnee District. Mines in these districts are further classified as follows:

6A (Class A) —All mines other than those hereinafter enumerated as "6B," "6BB," "6C," "6D" and "6E," including Mine No. 75, Syracuse, Ohio.

6AW (Class AW)—Covers washed or partially washed coal from mines in "6A" group.

6B (Class B) —All mines in Gallia, Lawrence, Meigs and Scioto Counties, except Mine No. 75, Syracuse, Ohio.

Also all mines in the No. 4 Seam in Vinton and Jackson Counties, except Mines No. 7 and No. 11 operated by John L. Lawler & Son, in Vinton County.

6BB (Class B) —Mines No. 7 and No. 11 operated by John L. Lawler & Son, in Vinton County.

6C (Class C) —All mines in the No. 8 Seam in Athens County.

6D (Class D) —All strip coal mines, except in Jackson No. 2 Seam.

6E (Class E) —All strip coal mines in Jackson No. 2 Seam.

MARKET AREAS	ORIGIN MINE GROUPS	M 1	LE 2							LE 3					E 4		N 5				NS 6	S 7	S 8
		MINE RUN (Note A)	OVER 4" LUMP		LUMP OVER 2" TO 4" INC. AND EGG SIZES SHOWN					LUMP 2" AND UNDER AND EGG SIZES SHOWN					EGG-BTM. SIZE 1¼" & Under-& TOP SIZE OVER 2" TO 4" INC.		NUT AND PEA, 2" & UNDER, DOUBLE SCREENED				2" N&S OVER 1¼" TO 2" INC.	SLACK ¼" TO 1¼" INC.	SLACK UNDER ¼"
							EGGS			LUMPS		EGGS			EGG	STOVE		STOKERS					
			5" PLUS	5"	4" LUMP	SPL. LP. 25% EGG	2x5"	2x6"	2½x4"	2"	1½"	1¼"	1½x4"	2x4"	1¼x4"	1¼x2½"	NUT	¾x1¼"	SPCL.	40Mx1½"			
1, 1A, 2 & 3	1, 3, 4 & 5	2 00	2 45	2 45	2 35	–	2 35	2 35	–	2 25	–	2 25	–	2 25	2 15	–	1 95	1 95	–	–	1 75	1 65	1.55
	1W	2 10	2 55	2 55	2 45	–	2 45	2 45	–	2 35	–	2 35	2 35	2 35	2 25	–	2 05	2.05	–	1 95	1 85	1.75	1 65
	2	2 00	2 55	2 55	2 45	–	2 45	2 45	–	2 35	–	2 35	–	2 35	2 25	–	1 95	1 95	–	–	1.75	1.65	1.55
	6*																						
4	1, 3, 4 & 5	2 00	2 40	2 40	2 30	–	2 30	2 30	–	2 20	–	2 20	–	2 20	2 15	–	1 95	1 95	–	–	1.75	1 65	1.55
	1W	2 10	2 50	2 50	2 40	–	2 40	2 40	–	2 30	–	2 30	2 30	2 30	2 25	–	2 05	2.05	–	1 95	1.85	1.75	1 65
	2	2.00	2 55	2 55	2 45	–	2.45	2 45	–	2 35	–	2 35	–	2 35	2 25	–	1 95	1 95	–	–	1.75	1 65	1.55
	6*																						
5 & 10	1, 3, 4 & 5	1 95	2 50	2 50	2 40	–	2 40	2 40	–	2 10	–	2 10	–	2 10	1 95	–	1 85	1 85	–	–	1.75	1 60	1.50
	1W	2 05	2 60	2 60	2 50	–	2 50	2 50	–	2 20	2 20	2 20	2 20	2 20	2 05	–	2 00	2 00	–	1.85	1 90	1.75	1 65
	2	1.95	2 70	2 70	2.60	–	2 60	2.60	–	2 30	–	2 30	–	2 30	2 05	–	1 85	1 85	–	–	1.75	1.60	1 50
	6*																						
6	1, 3, 4 & 5	2 00	2 45	2 45	2 35	–	2 35	2 35	–	2 20	–	2 20	–	2 20	2 15	–	1 95	1 95	–	–	1.75	1 65	1.55
	1W	2 10	2 55	2 55	2 45	–	2 45	2 45	–	2 30	–	2 30	2 30	2 30	2 25	–	2 05	2 05	–	1 95	1.85	1.75	1 65
	2	2 00	2 55	2 55	2 45	–	2 45	2 45	–	2 30	–	2 30	–	2 30	2 25	–	1 95	1 95	–	–	1.75	1 65	1.55
	6*																						
7	1, 3, 4 & 5	2 05	2 55	2 55	2 45	–	2 45	2 45	–	2 20	–	2 20	–	2 20	2 05	–	1 90	1 90	–	–	1 75	1.65	1.55
	1W	2 05	2.55	2 55	2 45	–	2 45	2 45	–	2 30	2 30	2 30	2 30	2 30	2 15	–	2 00	2.00	–	1 90	1.85	1.75	1.65
	2	2.05	2.80	2 80	2.70	–	2.70	2 70	–	2 40	–	2 40	–	2 40	2 25	–	1.95	1 95	–	–	1.75	1.65	1.55
	6*																						
8 (Note B)	1	2 05	2 60	2 60	2 50	–	2 50	2 50	–	2 20	2 20	2 20	–	2 20	2.20	–	2 00	2 00	–	–	1 85	1.85	1 75
	1W	2 10	2 60	2 60	2 50	–	2 50	2 50	–	2.25	2.25	2 25	2.25	2 25	2 25	–	2.10	2 10	–	2 00	1 90	1.85	1.75
	2	2 05	2 75	2 75	2 65	–	2 65	2 65	–	2.35	–	2 35	–	2 35	2 35	–	2 00	2 00	–	–	1.85	1 85	1.75
	3	2 05	2.70	2 70	2 60	–	2 60	2 60	–	2 30	2 20	2 20	–	2 30	2 20	–	2.00	2 00	–	–	1.85	1 85	1.75
	4	2 20	x2 85	x2 85	x2 75	–	x2 75	x2.75	–	x2 45	x2 45	x2 45	–	x2 45	x2 45	–	2 15	2 15	–	–	1 95	1 95	1 85
	5	2 15	x2.75	x2.75	x2 65	–	x2 65	x2 65	–	x2.35	x2 35	x2 35	–	x2 35	x2 35	–	2 15	2 15	–	–	1 95	1 95	1 85
	6A	2 05	–	–	–	–	–	–	–	–	2 20	2 20	–	–	–	–	2.00	–	–	–	1 80	1 80	1 80
	6AW	–	–	–	–	–	–	–	–	–	2 20	2 20	–	–	–	–	†2 10	–	–	–	1.80	1 80	1.80
	6B and 6BB	2 05	–	–	–	–	–	–	–	–	2 20	2 20	–	–	–	–	2.00	–	–	–	1.70	1.70	1.70
	6C	2.05	–	–	–	–	–	–	–	–	2 20	2 20	–	–	–	–	2 00	–	–	–	1 80	1.80	1 80
	6D	2 05	–	–	–	–	–	–	–	–	2 20	2 20	–	–	–	–	2 00	–	–	–	1.70	1.70	1 70
	6E	2 05	–	–	–	–	–	–	–	–	2.20	2 20	–	–	–	–	2 00	–	–	–	1.90	1 90	1 90
9	1, 3, 4 & 5	2 05	2.60	2 60	2 50	–	2 50	2 50	–	2 20	–	2 20	–	2 20	2 15	–	1 90	1 90	–	–	1.75	1 65	1 55
	1W	2 05	2 60	2 60	2 50	–	2 50	2 50	–	2 30	2 30	2 30	2 30	2 30	2 25	–	2 00	2 00	–	1 90	1.85	1.75	1 65
	2	2 05	2 80	2 80	2 70	–	2 70	2 70	–	2 40	–	2 40	–	2 40	2 25	–	1 95	1 95	–	–	1 75	1.65	1.55
	6*																						
11	1, 4 & 5	1 95	2 40	2 30	2 30	–	2 15	2 20	–	2 15	2 10	2 10	2 05	2 15	2 05	–	1 90	1 85	–	–	1.70	1.70	1.70
	1W	2 00	2 40	2 30	2 30	–	2 20	2 25	–	2 20	2 15	2 15	2 10	2 20	2 10	–	2 00	1 95	–	1 85	1.75	1.70	1.70
	2	1 95	2 60	2 50	2 50	–	2 15	2 20	–	2 40	–	2 10	–	2 15	2 05	–	1 90	1 85	–	–	1 70	1.70	1.70
	3	1.95	2 50	2 40	2 40	–	2 15	2 20	–	2 25	–	2 10	–	2 15	2 05	–	1 90	1 85	–	–	1.70	1.70	1.70
	6A	1 95	2 60	2 50	2 50	2 45	2 15	–	–	2 40	2 10	2 10	2 05	2 15	–	–	1 90	–	1 85	–	1.70	1.70	1.7c
	6AW	–	–	–	–	–	†2 25	–	2 35	–	–	–	–	†2 25	–	2 05	†2 00	–	–	–	–	1.70	1.70
	6B	1 95	2 45	2 35	2 35	–	2 05	–	–	2 25	2 10	–	2 05	2 05	–	–	–	–	–	–	1 60	1 60	1.60
	6BB	1 95	2 45	2.35	2 35	–	2 15	–	2 35	2 15	2 10	–	2 05	2 15	–	–	–	–	–	–	1.60	1 60	1.60
	6C	1 95	2 40	2 30	2 30	–	2 15	–	–	2 15	2 10	–	2 05	2 15	–	–	–	–	–	–	1 70	1 70	1.70
	6D	1 95	2 45	2 35	2 35	–	2 05	–	–	2 30	2 10	–	–	2 05	–	–	1 90	–	–	–	1 60	1 60	1.60
	6E	2 05	2 60	2 50	2 50	–	2 15	–	–	2 40	2 10	2 10	2 05	2 15	–	–	–	–	–	–	1 80	1.80	1.80

(Note A) Includes all resultant and modified resultant above 2"; also modified mine run.

(Note B) Prices shown into Market Area 11 will apply into Market Area 8 west of the western boundaries of the Ohio counties of Lorain, Medina, Wayne, Holmes, Coshocton, Muskingum, Morgan and Washington.

(Note C) Except as otherwise specifically indicated, the prices from Origin Mine Group 6 into Market Area 11 also apply for that Group into all other Market Areas.

(Note D) Prices per net ton f.o.b. mines, from both strip and deep mines producing coal from the No. 8 seam but included in the Middle District Freight Rate Zone, to any specific destination, shall be the effective No. 8 District price applicable to the specific size to be sold, plus an amount equal to the difference between the freight rates from the No. 8 and Middle Districts to the same destination.

* Same prices as apply to Market Area 8.

x Minimum fair market prices on respective sizes indicated, 5c per net ton less when destined to points within Medina, Lorain and Cuyahoga Counties, Ohio, also to all points on the Erie Railroad between Phalanx and Cleveland, inclusive.

† Washed egg and nut coal from Valley No. 1 (Eclipse) Mine of Hocking Valley Mining Company take same prices as shown for raw or hand cleaned coal.

Effective January 7, 1935 and until further notice.

Prices of the Illinois and Indiana districts, and of Western Kentucky, furnish good examples of correlation. The delivered prices for Central Illinois, Brazil-Clinton, Linton-Sullivan, and Princeton-Ayersmire were the same, $3.50. This was made possible through an adjustment of the mine prices since there was a variation in the freight rates on shipments from these districts to Chicago. It was necessary for Central Illinois and Linton-Sullivan to absorb 10 cents in freight because of the rate of $1.55 effective from Brazil-Clinton. Likewise, Princeton-Ayersmire had to absorb 22 cents. Both Southern Illinois and Western Kentucky had a delivered price of $4.00, obtained by having Western Kentucky absorb 30 cents.

PRICES AT CHICAGO

Comparison of delivered price on Run of Mine Coal originating in selected areas, per net ton, December 20, 1934.

Subdivision and Producing District	Mine Price	Railroad Freight Rate	F.O.B. Chicago	Difference above Northern Illinois
Illinois				
Northern Illinois	$ 1.70	$ 1.10	$ 2.80	$
Central Illinois	1.85	1.65	3.50	.70
Southern Illinois	2.05	1.95	4.00	1.20
Indiana				
Brazil-Clinton	1.95	1.55	3.50	.70
Linton-Sullivan	1.85	1.65	3.50	.70
Princeton-Ayershire	1.73	1.77	3.50	.70
Evansville	1.55	1.80	3.35	.55
Western Kentucky	1.70	2.30	4.00	1.20
Southern Subdivision #2				
Eastern Kentucky:				
Millers Creek	2.10	3.09	5.19	3.39
Hazard	1.95	3.09	5.04	3.24
Elkhorn	1.95	3.09	5.04	3.24
Harlan	2.10	3.09	5.19	3.39
West Virginia:				
Williamson	1.95	3.09	5.04	3.24
Kanawha	1.95	3.09	5.04	3.24
Logan	1.95	3.09	5.04	3.24
Southern Subdivision #1				
Pocahontas and New River	2.30	3.29	5.59	2.79

Source: "Minimum Costs of Products and Services", Divisional Code Authority 26, Retail Solid Fuel Industry.

F. Problems in Price Control

Problems in price control developed quickly and increased rapidly soon after the Code was put in operation. Important among the problems were the controversies between Code Authorities traced largely to the lack of standards as to prices, and the absence of a definite procedure for handling and settling disputes. Each Code Authority and marketing agency had its own ideas on price establishment, and conflicts were in evidence when price schedules for common markets were first compared. No central board existed to adjudicate the disputes, while the Code Authorities showed little desire to delegate any effective power to a general agency. Compliance was another phase responsible for difficulties. It was not easy to police price compliance, nor was it a simple matter to obtain evidence on price evasions. There was always the fear of sudden price cutting and the crumbling of the price structure.

Examples of several of the more important controversies will illustrate the nature of the price problems.

Division II and Western Kentucky: One of the earliest price difficulties was the controversy between Illinois, Indiana and Iowa, the Subdivisions of Division II. Western Kentucky, which despite its geographical and geological location was part of Division I, was an interested party in the sense that its action on prices was dependent on the outcome of the dispute. The conflict between these Subdivisions, which reached its height during the first four or five months of the Code, seemed at times to be beyond the settlement, and many feared the effects would become widespread and endanger the general Code set-up.

A record of the early events that formed the background of the controversy are found in the transcript of a December meeting. (Conference, Division II, Western Kentucky and Eastern Representatives; Washington, D. C., December 7, 1933.) A number of issues are involved, but they all center around the question of how the prices of the Subdivisions of Division II, and Western Kentucky, were to be correlated in common markets.

It seems that the producing districts in Division II looked to the Southern Illinois district for leadership in price matters. Southern Illinois had been the largest producing district of Division II territory, and had been well organized. Apparently it was generally accepted, when the Code prices were first being set up, that Southern Illinois was to have a base price of $2.75 per ton on 6" lump, and that other districts were to adjust their prices accordingly. Protests were soon entered that $2.75 was too high, and the base price was reduced to $2.45. Activity was then directed to the relationship of prices between the Illinois. It appears that Indiana was not active with Illinois when the latter's schedules were being formulated, and the early price work of the Indiana districts was largely local to the Indiana Subdivision. Illinois and Indiana representatives had met on various dates between the middle of September and the middle of October, but no agreements were reached on market correlation. Both Illinois and Indiana received temporary approval of their prices in Washington, on October 18, but Illinois immediately found its districts in disagreement, largely because

of the Indiana prices, and later withdrew its price schedules to operate under non-Code prices. Iowa and Western Kentucky were awaiting developments.

The Indiana price schedules, as temporarily approved, permitted a maximum freight absorption of 30 cents per ton, and lower prices in one market zone as against the other. This was disturbing to the Illinois districts as they were setting up prices without freight absorptions or zones, and generally confusing since the applications of the absorptions and zones of the Indiana schedules were not clearly understood without a great deal of figuring. Districts outside of Indiana recognized that drastic price adjustments were necessary if customary markets were to be maintained. By the end of October, it was evident that a price war was brewing, and by the middle of November the war was in full progress. Indiana withdrew its temporary approved prices on November 11, as it agreed to do if a satisfactory arrangement could not be reached with Illinois. On November 13, approval was given to Illinois prices which had a freight absorption clause the same as for Indiana. The latter Subdivision also then got approval to use again the zone market system. Subsequently, freight absorptions were used widely and in varying ways by all the districts of Division II, and Western Kentucky, and the price structure was in a jumble. The situation was irritating to Division I, which is a competitor of Division II, and its representatives indicated a desire to enter the warfare if settlement was not brought about in the near future.

The price difficulties of Division II may be related to two factors: lack of understanding as to the Code organization; and varied ideas as to how prices should be set up. Operators were in disagreement as to the functions of the Divisional and Subdivisional Authorities, and they were not sure of the powers of the Presidential Members. As to prices, some operators supported the principle that a mine price, varying according to several market zones and freight absorptions, formed the best kind of price structure. Others favored a mine price with no allowances. It appears that, in either case, emphasis was given to prices at the mine, and little attention was directed to the establishment of prices in markets as was intended by the Code.

As a result of the meeting at Washington on December 7, 1933, a definite plan was drawn up that the several issues be treated. Among other things it was specified that the sixth vein of Franklin County, Illinois, be used as a basis of correlation for prices to be submitted December 15, and that no contracts be made until these prices were approved. Maximum freight absorptions were to be eliminated. On December 9, representatives met to correlate prices, but classification problems were encountered and little success was met. (See Coal Prices, Indiana v. Illinois, prepared by Illinois Coal Bureau, January 3, 1934.) Meetings were continued throughout the winter with never a general price agreement in view. The records are not clear as to the degree and time of settlement of the Division II issues, but it is known that difficulties were experienced in the spring of 1934 as the contract moratoriums and complaints of districts indicate, and the effects of the conflict were never entirely removed during the Code period.

Price Controversy between Northern West Virginia, Western Pennsylvania, and Eastern Subdivisions: Northern West Virginia, Western Pennsylvania, and Eastern Subdivisions had trouble in correlation from the first. By December 1933, price disagreements had developed into price cutting, and soon a price war was under way. (Saward's Journal, Vol. 16, January 20, 1934, p. 589.) This situation, along with the Illinois and Indiana dispute, made many feel that the price structure was due for a complete breakdown. (See Transcript N.B.C.I.B., January 1934.) Active warfare disappeared in the middle of January, 1934, when some agreements were reached between the Subdivisions, but the matter had become complex with numerous conflicts, and the controversy was to require treatment throughout the Code months.

Classification difficulties seemed to be at the bottom of the matter. Northern West Virginia, Western Pennsylvania, and Eastern Subdivisions were highly competitive in leading markets, and each was quick to oppose any measure or action that appeared to give disadvantages. Each had separate ideas as to classification and, when attempts were made to relate the coals, disagreement arose as to what constituted a common basis. It seems that as between the classifications and correlations proposed, the acceptance of any one would have required a revamping of existing prices. As a result of a meeting between these Subdivisions on March 9, 1934, it was decided that a technical board would be appointed to study the classification problem; and temporary price adjustments were agreed upon as well as a contract moratorium to extend from March 12 to April 10, 1934. (Decision, N.C.B.A. - Docket 27, April 26, 1935.)

On June 15, 1934, the technical board submitted its final report on classification. (An excellent summary of this report is found in "The Problem of 'Minimum Fair Competitive Prices' in the Bituminous Coal Industry", by Stephen P. Burke.) The technical board proceeded along impartial and scientific lines, and its findings were contributions of value. It made a thorough study of a consumer class which, it estimated, represented the most probable destination of any ton of steam coal. The board was concerned solely with a basis for measuring the relative value of coals to the consumer, and not with the actual price of any coal. Findings of the technical board were not acceptable by all parties, however, and the controversy continued, being given much attention during the time of the National Coal Board of Arbitration. (See, Brief Eastern Subdivision, Docket 13, N.C.B.A.)

Prices on Railroad Coal: The selling of railroad coal below Code prices was a subject of much discussion during the first half of 1934. A great deal of the discussion was directed to the relations between the Louisville and Nashville Railroad and various operators, and the prices this carrier was obtaining on coal. The climax of the matter was the Bledsoe Coal Company Case which was heard and decided by the National Compliance Board on May 15, 1934. Since compliance was the main issue, the Bledsoe case throws some light on the early price evasions.

The Bledsoe Company owned, controlled, or acted as sales agency for a number of mines located in Tennessee, Kentucky, Indiana, and Illinois. These included 6 mines in the territory of Southern Subdivision No. 2, and served by the Louisville and Nashville Railroad. On April 23, 1934, the Bledsoe Company entered into a contract with the Louisville and

Nashville for the sale of 75,000 tons of 4" screenings at $1.70 per ton when the approved minimum price for this specified coal was $1.80.

Statements of the Bledsoe Company suggest the price evasions current at that time. In a letter to the Deputy Administrator, dated May 7, 1934, the Company contended that, during the first months of the code, certain operators actually cut prices and thereby obtained the business of the L & N. The action of these operators was covered up when their prices were subsequently approved. Probably a better description is contained in the memorandum of the N.R.A. Legal Division, May 4, 1934, wherein evidence was given of much coal being sold below the approved minimum prices in Southern Subdivision No. 2, and to the extent that the Code structure was threatened. Another memorandum noted that the L & N was more active in price fixing than the Code Authorities. (To Compliance Division from Deputy Administrator, May 10, 1934.)

A condition that contributed towards price disorder in Southern No. 2 was that representatives of Appalachian Coals Inc., made up the larger part and control of the Code Authority, and some operators who were not members of this sales agency felt they were at a disadvantage. The Bledsoe Company, for instance, held that Appalachian Coals was in a position to get price information from 24 to 48 hours before operators outside its fold; and that classifications and prices were often made to fit market conditions as they affected the Appalachian group. (Hearing, National Compliance Board, May 15, 1934, pp. 35, 43.) It was claimed that a rumor of another decrease in price, soon after prices had been reduced 5 cents to $1.80 by the Code Authority on April 28, was disturbing in that the Bledsoe Company feared a return of the condition where prices would be cut by certain operators and then later approved. It was said this condition, along with the threat that the L & N would buy coal in Western Kentucky at $1.55 rather than pay $1.80, prompted the Bledsoe interests to offer their coal at $1.70. (Ibid p. 44.)

Denials were presented at the compliance hearing that Appalachian Coals took advantage of its position to give favors to its membership. A feature of the hearing was the attitude of the United Mine Workers. Mr. Van A. Bittner, President District 17 of the United Mine Workers, stated that prices and wages are so closely interrelated that his organization must take an active interest in price matters. He claimed that members of the United Mine Workers would not produce coal for any operator that engaged in selling coal below Code prices. (Transcript p. 26.) This was more than a forceful statement since miners actually refused to work for certain operators involved in the case. (Coal Age, Vol. 39, June, 1934, p. 254.) The National Compliance Board found that the Bledsoe Company had violated Section 1 of Article VI of the Code, and the case was referred to the Litigation Division for submission to the Department of Justice. Federal prosecution was not necessary, however, as a compromise was effected between the operators wherein the Code minima on railway fuel was increased slightly above the $1.70 figure, and the L & N announced it would buy at the new prices. (Coal Age, Vol. 39, July 1934, p.291.)

Other Price Problems: The price controversies under the Code were numerous. Some are considered in detail in the next section of this Chapter, (see The National Coal Board of Arbitration) and others will be mentioned here as a matter of reference. Long term contracts caused no end of trouble. Little information was available on the pre-Code con-

tracts, and it was never definitely known whether they were permitted to expire as provided in the original agreements, or whether conditions in the agreements were applied so as to permit extensions in certain cases. Another difficulty arose when certain operators entered contracts for the delivery of coal after the expiration of the Code, June 16, 1935, without regard to Code prices. This resulted finally in the adoption of Amendment 5, January 8, 1935, which prohibited the making of a contract at a price below the fair market price effective on date of contract. Administrative Order X-48, June 12, 1934, granted exemptions to any members of industry, subject to Code of Fair Competition, who bid on contracts to be awarded by government agencies that specify conditions which fail to correspond with Code provisions. The Order really placed governmental agencies in the most favorable buyer classification. As applied to the bituminous coal industry, operators were quick to attack the Order as they saw it contained parts that would destroy the price control that had been established. The N.R.A. Legal Division admitted that the Order constituted an Amendment to the Bituminous Coal Code, and an amendment made without granting to the members of the industry an opportunity for a hearing. (Memorandum, To Administrator, June 21, 1934.) On June 27, 1934, the Administration declared the Order inoperative in respect to the bituminous coal industry, the coal dock industry, the wholesale coal industry, and the retail solid fuel industry. A somewhat similar experience was in connection with Executive Order #6767, June 29, 1934, which permitted members of industry to quote reduced prices to Government agencies, the reductions not to exceed 15 per cent of the approved Code prices. This Order modified Executive Order #6646, March 14, 1934, which required Federal agencies to purchase from companies complying with their Codes. Before operators had a chance to make formal protests, it was decided that Executive Order #6767 did not apply to bituminous coal because it referred to codes which required the open filing of prices. No such requirement was in the Bituminous Coal Code. (Memorandum, to The Comptroller General, from Frank Healy, Chief, Government Contracts Branch.) Besides difficulties due to correlation and contracts, a number of important cases were in connection with price compliance, while wholesale discounts caused much trouble.

A general price disturbance was felt in October, 1934, when it was indicated that the Administration was going to oppose price-fixing. (Developed from informal remarks by Mr. Donald Richberg.) The statement was received with alarm by coal operators, especially since many interpreted it to mean that all price fixing would be abolished. A buyers' strike resulted. (Bulletin, National Coal Association, October 13, 1934.) Following protests from operators, the Administration definitely held that the price provisions of the Bituminous Coal Code would be continued and no changes would be made except as permitted by the Code. (N.R.A., October 10, 1934.)

Developments in Price Control: Early efforts were made to organize an administrative machinery to centralize the activities between Divisions, Subdivisions, and marketing agencies. The early organization proposals, however, received little support, and no formal organization was set up until the summer of 1934. At the meetings of the National Bituminous Coal Industrial Board, January, 1934, plans were

The work of the Presidential Membersof Division I was soon to be extended to the settling of controversies. It cannot be determined from the records as to the origin of the new duties of the Presidential Members, though it appears that the Joint Marketing Committee had a part in their establishment. On June 25, 1934, the Joint Marketing Committee passed a motion that the Presidential Members of Division I (excepting Western Kentucky) organize as a Board, establish a procedure for hearing cases, and present decisions to the Deputy Administrator. (Letter to W. P. Ellis from Joint Marketing Committee, June 25, 1934.) It seems that the Joint Marketing Committee had been unable to settle a number of important controversies, and believed a greater degree of success was possible through the concentrated action of the Presidential Members. The new organization became known as the Presidential Board of Review, and later as the Board of Review. Its functions were primarily to treat the cases which the Joint Marketing Committee was unable to settle. The Board faced obstacles from the first. It had no definite authority; while its members were unable to separate themselves entirely from the interests of their respective Code Authorities, the latter a particular weakness since its decisions on price controversies required a unamimous vote. (Definite rules and regulations of the Board, established at meetings of October 10 and 11, also included the unanimous vote provision.) The Board was unable to add much to the work of the Joint Marketing Committee. (See Hearings of the Presidential Members of Division I, and Transcript of Meeting N.B.C.I.B., January 3, 1935, p. 239.) Western Pennsylvania indicated its opposition to the Board of Review in the late part of 1934, and withdrew from the procedure on December 31. (Letter to Administrator from Western Pennsylvania Code Authority, December 14, 1934, and Coal Age, Vol. 40, Janaury 1935, p. 45.) Amendment 6, January 25, 1935, provided for a general board of arbitration, the functions of which superseded and made unnecessary the work of the Board of Review.

Tonnage Allocation: Production control between competing districts as an aid to price stabilization had been considered for some time in the bituminous coal industry. For instance, the Lewis Bill on bituminous coal regulation, introduced in June 1933, made specific provision for tonnage allocation as between 30 coal districts in the United States (H.R. 6040, 73 Cong. 1st Ses.) Allocation was given attention in the meetings of the National Bituminous Coal Industrial Board, held in January, 1934. (Transcript of meeting, January 16, p. 5.) In May 1934, J. L. Steinbugler made a plea for tonnage allocation, citing as examples the method of production control used in Germany and England. (Meeting of U. S. Chamber of Commerce reported in Coal Age, Vol. 39, June 1934.)

A form of tonnage allocation was established on July 12, 1934, when Subdivisions in Division I, excepting Ohio and Western Kentucky, signed an agreement whereby each agreed as to what their tonnage proportions should be. The allocation was eventually known as the Adams' Plan, in relation to C. E. Adams, who took an active part in making the agreement possible. Ohio was not agreeable to the plan, while Western Kentucky was not interested because of its separation from other Subdivisions on production and marketing matters. Ohio's objection was that its allotment was too low as compared with its past performance. (Brief Ohio Subdivision, Docket 6-N.C.B.A.) The effective date of the allocation was from July 12 to December 31, 1934, and the proportions assigned to the Subdivisions were as shown below. (Discussion of set-up of plan in transcripts of meetings of Chairman of Subdivision, Di-9837.

vision I, July 11 and 13, 1934.)

Southern Subdivision No. 1	18.25 Per Cent
Southern Subdivision No. 2	30.10
Western Pennsylvania	17.75
Eastern Subdivision	15.30
Northern West Virginia	8.50
Ohio Subdivision	8.40
Panhandle of West Virginia	1.70
	100.00

The purpose of the allocation was to establish a basis to aid in the measuring of the price relationships between the Subdivisions. It was provided that each Subdivision was to file with the Deputy Administrator, on or before the 25th of each month, a statement of its tonnage produced in the preceding month, showing captive tonnage separately. These tonnage statements were to be checked against the Bureau of Mines reports. The connection of the tonnage figures to prices was that if any significant departures from the proportions were evident (aside from seasonal variations) and which indicated a diversion from a Subdivision, the price structures were subject to adjustment so that the share of each Subdivision would be maintained.

The per cent that actual commercial production in 1934 was of the "Adams allotment":

Southern Subdivision No. 1	104.7
Southern Subdivision No. 2	101.8
Western Pennsylvania	97.4
Eastern Subdivision	99.3
Northern West Virginia	91.5
Ohio Subdivision	100.5
Panhandle of West Virginia	91.3

(See "The Problem of Minimum Fair Competitive Prices in the Bituminous Coal Industry" by Stephen P. Burke, p. 25.)

A new allocation was not established with the expiration of the tonnage agreement on December 31, 1934. The records do not disclose that the tonnage agreement had been used effectively in the adjusting of prices. Its value seems to have been primarily in the restricting of unlimited price cutting. With the opening of the new year, interest was concentrated on the revamping of the price provisions of the Code, but with little attention directed to tonnage allocation.

Code Amendments: By the later part of 1934, it was recognized that drastic changes were necessary to strengthen the price structure. Every means had been attempted to operate with the autonomy of Code Authorities preserved, but each effort was followed with failure. The last resort was to amend the Code so that greater centralized action would be possible. Until this time, price amendments to the Code had been avoided. Amendment 2, April 22, 1934, and Amendment 3, June 4, 1934, contained provisions to protect the normal consuming markets of producing districts against lower prices than might be quoted by certain other districts enjoying favorable wage differentials. These amendments, how-

ever, made no reference to price methods or price administration. (The application of Amendment 2 is found in the next section under Docket 38.) Amendment 4, November 5, 1934, was concerned with the collection of statistics, and only related to prices insofar as the data were to be used in price determinations. Amendment 5, January 8, 1935, was directly connected with prices in the sense that it dealt with contracts. It was a protection against price cutting on coal to be delivered after the expiration date of the Code, June 16, 1935, but it did not extend to general price phases. A general revision of price methods did not appear until Amendment 6, January 25, 1935.

Amendment 6, as written, resulted from the meetings of the National Bituminous Coal Industrial Board held in January 1935. Discussions during the meetings form a summary of operations under the Code, particularly in regard to the breakdown of compliance; the inability to settle disputes; and the lack of coordinated action; subjects illustrated by actual cases in the first part of this section. (See especially the transcript of January 4, pp. 8-9, 80-95.) Many representatives recognized that Government control was the only solution unless a workable scheme of centralized action between the Code Authorities could be established. Opposition to centralization was now in the minority, led by Western Pennsylvania, which favored a return to the ideas of localization found in the original Code (Ibid p. 35). It was generally agreed by all, however, that the price structure was rapidly weakening.

Articles VI and VII of the Code were changed completely by Amendment 6. Additional conditions were prescribed for price establishment. It was specified that Code Authorities and marketing agencies, in determining fair market prices, should take into consideration, among other factors, the purposes of the N.I.R.A., wage rates, competition of other fuels, consumer needs and requirements for kinds and sizes of coal, and the necessity for giving to consumers reasonable opportunity to buy and to producers reasonable opportunity to sell their coal in usual and normal markets. Provision was made that classification, based on all factors considered in connection with physical structure, chemical analyses and salability, should be considered by the Code Authorities and marketing agencies when fixing prices. Competition was to be preserved but dumping prices were to be prohibited. (Article VI, 2b.) Prices were to be effective after approval by the Presidential Member (acting under direction of Administrator), were to be published by the Code Authority, with reference made to changes, and submitted to the Administrator for his review and subsequent action. (Article VI 2f). It will be noted that no date of fair price publication was named, a difference as compared with the original Code.

Another addition of Amendment 6 was the procedure entitling an operator to make objections to the Code Authority or marketing agency establishing his prices. The Code Authority or marketing agency was instructed to hold a hearing within 5 days after receipt of written complaint, unless an extension of time was agreed to by the operator. The operator was given the right to appeal to an impartial Board of Arbitrators if he was dissatisfied with the decision of the Code Authority or marketing agency. (Article VI, 3.)

It was further provided that agreements could be entered into between Code Authorities, between marketing agencies, or between both, as to a basis for market prices. The agreements were to be submitted to the Administrator and were to become effective within 10 days after receipt by him unless he disapproved them. Where a Code Authority or marketing agency was of an opinion that its producers might be affected by the failure to reach an agreement, or that unfair prices or practices result from any agreement, it could make an appeal to the National Board of Arbitration. (Article VI, 4.)

The administrative machinery for the new price set-up was contained in Article VII. Provisions were made for arbitration boards for Code Authorities and marketing agencies active in the establishing of prices, and for the National Bituminous Coal Industrial Board. The former, designed to handle local matters, were to consist of not more than 5 members, who were not to be connected directly or indirectly with the coal industry. The National Board represented the new means by which to obtain centralized action between the Code Authorities and marketing agencies.

Western Pennsylvania opposed Amendment 6, and failed to recognize the proceedings and decisions of the National Coal Board of Arbitration. This Subdivision disliked the method of electing members of the Board, holding that it was not promotive of impartiality. It also believed that, in view of the Federal legislation pending at the time, it was impractical to set up a temporary board involving a large expense. (Telegram to Chr. S. Clay Williams from Code Authority of Western Pennsylvania, February 6, 1935.)

G. The National Coal Board of Arbitration: Article VII of the Code, as revised by Amendment 6, provided that the Board was ".... to settle disputes and controversies between or among marketing agencies or Code Authorities representing different Divisions or Subdivisions with respect to fair competitive prices and practices relating thereto.. .." The Board was designated as an impartial agency of 5 members who were to be elected members of the National Bituminous Coal Industrial Board (the nine members named by the Divisional Code Authorities) and subject to approval of the Administrator. Election was by majority vote and the term of office was two years. A maximum salary of $10,000 was specified, with the salaries of each member of the Arbitration Board to be decided by the electors. A vote of at least six of the electors was required for removal of a member of the Bituminous Board. Salaries and expenses of the Board were to be paid by the Divisional Code Authorities on a tonnage basis.

A skeleton of procedure was also contained in the provision of Article VII. Complaints were to be in writing, and made only by a marketing agency or a Code Authority. The Arbitration Board was to establish all necessary rules and regulations for its operation, and was instructed to keep a record of its actions. Complaints were ordinarily to be heard within 10 days. Copies of the complaints were to be sent to other interested marketing agencies and Code Authorities and to the Administrator in accordance with the rules of the Arbitration Board. It was prescribed that the Arbitration Board be governed by the same principle and standards in respect to prices and practices as contained in the Code. Decisions were to be transmitted to the Administrator for approval or disapproval, and when approved were to take effect within 10 days after receipt. Appropriate publication was to be made by the Code Authority of any change in price required by a decision.

It will be seen from the above that the National Coal Board of Arbitration was an agent for the bituminous coal industry and, while it was supposed to be impartial, its work was at disadvantage since its members were dependent on the industry for their appointments, tenures, and salaries; and decisions of the Board were subject to the approval or disapproval of the Administrator.

Members of the Arbitration Board, elected February 1, 1935, were Dr. A. W. Gauger, Director of the School of Mineralogy, Pennsylvania State College; Godfrey N. S. Tait, Technical Assistant, Coal Section, N. R. A., and former engineer; J. R. Henderson, Executive Secretary, Illinois Subdivisional Coal Code Authority; John A. Sargent, Kansas City, Missouri, former executive of the Central Coal and Coke Company; and W. H. Sadler, Jr., an attorney of Birmingham, Alabama. (Bulletin, National Coal Association, February 2, 1935.) Captain Tait was named as Chairman; Mr. Sadler as Vice-Chairman; and Mr. Henderson as Secretary.

The first duties of the Arbitration Board were to formulate rules for the hearing of complaints. These were mailed to members of the industry on February 9, 1935, slightly more than a week after the appointment of the Board. The rules gave full description to the new price provisions of Amendment 6, and prescribed additional regulations necessary to expedite the handling of complaints. Among other things,

it was provided that "no complaint shall be sustained except upon concurrence therein by a majority of the toal number of members of the Board".(*) Stress was given to the provision in Amendment 6 which specified that no marketing agency or Code Authority might submit any complaint to the Board unless the complainant should have, in good faith, endeavored to settle the matter with the marketing agency or Code Authority complained against.

From the time the Arbitration Board was appointed, February 1, 1935, until May 27, less than four months, records show that 50 complaints were made and assigned to the Boards' docket. Of the total complaints, 33 decisions were rendered; 12 complaints were dismissed or withdrawn, and 5 were still to be decided. In a number of instances, petitions or Administrative orders were made for rehearings and, where these were granted or required, 9 decisions were made, bringing the total decisions to 42. Five cases are found in the files where the Board's decisions were disapproved or modified by the Administrator. (See Dockets 20, 27, 28, 29, and 30 of the Board) The large amount of work covered within a short time indicates the efficiency with which the Board performed its duties.

The Arbitration Board made possible the formal treatment of many questions that had been prominent in the industry, particularly since the beginning of the Code. Below will be found descriptions of a few important cases heard and decided by the Board.

DOCKET I

Subdivision No. 1 vs. Eastern Subdivision. Competitive conditions in New England: Docket #1 of the National Coal Board of Arbitration involved the complaint of the Smokeless Coal Code Authority -- Subdivision No. 1 of Division I, concerning competitive conditions in New England; Eastern Subdivision of Division I was the respondent. The case centered around the competition of coal shipped all-rail from Eastern Subdivision with coal originating in the Smokeless fields and moved by rail and water to the New England destinations. The complaint was received by the Arbitration Board on February 16, 1935.

Brief of Southern Subdivision #1: Southern Subdivision #1 presented a lengthy brief to support the complaint. It was contended that the complaint was in connection with a long drawn-out controversy that originated with these two subdivisions when certain price changes were made in January, 1934. The claim was that these price changes had given advantages to Eastern Subdivision at the expense of the complainant. Diversions were estimated from 1½ million to 2 million tons. Three factors were considered by the complainant as controlling in the case; the setting of Market Area #1, consisting of the eastern part of New England, by which the price spread between Smokeless and Eastern Subdivision was reduced 11 cents per gross ton; second, the unequalities of Eastern Subdivisions classification between Barnesboro and Somerset County coals and Nanty-Glo Class "A" coals, which further

* "Rules and Regulations for the Operation and Procedure of the National Coal Board of Arbitration". - N.C.B.A., February 9, 1935.

reduced the price spread between the two Subdivisions; and third, reductions in all-rail rates to certain New England points which disturbed the previous price set-up.

The Smokeless group held that, in the latter part of December, 1933, it had accepted the arrangements of Deputy Administrator Ellis to sit in conference with Eastern Subdivision to discuss correlation. A meeting was planned for January 4, which was later changed to January 9. It was stated that Smokeless found, upon entering the meeting, that Eastern Subdivision had made a drastic reduction in their prices January 2, by setting up a schedule of prices for a new market territory called Area #1, which was formerly part of Market Area #2. Eastern Subdivision was asked to cancel the new prices. This resulted in various negotiations, and no semblance of correlation appeared between these two Subdivisions until February 6, 1934, when an agreement was reached whereby Eastern Subdivision was to publish certain prices until a study of the coal [illegible] freight rate and traffic situation in New England was made, which would furnish a basis for further consideration of the price set-up. These prices, which were from 10 to 15 cents higher than the prices in January 2 schedule, were said to be, per net ton:

	R.O.M.	2" Stoker	¾" Slack
Nanty-Glo	$2.05	$ 1.90	$ 1.75
South Fork	2.10	1.94	1.75

In April, Nanty-Glo prices were advanced 25 cents due to wage increases.

Southern Subdivision #1 appointed its traffic committee on June 4, 1934. It was claimed the work of this committee was soon brought to a halt when the New Haven Railway refused to furnish certain data on shipments because of objections from Eastern Subidvision. In December 1934, an agreement was made between the two Subdivisions as to what traffic information should be obtained, but it is said that little success resulted in the traffic project because of the inability to get effective cooperation from Eastern Subidvision. By January 21, 1935 the Subdivision #1 Code Authority decided it was useless to reach a solution to the problem through attempted cooperation with Eastern Subdivision, and thereupon proposed a maximum freight absorption of 30 cents to certain New England points, the amount to be graduated according to the sum required to set up delivered prices on a parity with Nanty-Glo Class "A" coals.

Southern Subdivision #1 emphasized the point that the various subdivisions, in assuming the responsibility of price fixing, were to do so on the promise that all retained their right to maintain pre-Code tonnage flow to their accustomed markets, and where adjustments with competing coals of other subdivisions was necessary, these prices should be adjusted grade for grade, and size for size, on a delivered basis. It was stated that though water transportation enters the New England picture, the shipping facilities are limited and of such a character as to permit a sound annual cost per ton on the shipments. A total of $3.70 per gross ton was presented as the minimum transportation and handling charge on coal moving from the Smokeless fields by rail to Hampton Roads and thence

to New England ports, including the amounts for discharge, storage and reload.

By adding to the mine price the $3.70 basis and the ex-tide rate from port to destinations, Southern Subdivision presented its various delivered prices at a number of New England points, and compared these prices with those on Eastern Subdivision coal which consisted of mine price plus the all-rail freight rates. Nanty-Glo Class "A" coals are given the same basis as Smokeless Class "B" coals, and "run of mine" is used as a common size since it was said to be the size basis for Eastern Subdivisions. It is shown, for instance, that the delivered price to Cheshire, Connecticut, which is in New Market Area #2 and located 16 miles from New Haven, gives Smokeless a 7 cents advantage over Eastern Subdivision. At Wallingford, Connecticut, located 13 miles from New Haven, the Market Area #1 prices apply, which gives Smokeless coal a disadvantage of 16 cents. Examples are given of the delivered prices that applied in the different freight rate destination groups, and the advantages or disadvantages given the smokeless fields in those territories. Attention is also directed to the effects of the freight rate changes both in Market Area #1 and Market Area #2. In summary, it is stated that for a total of 374 destinations, nearly all of which were located in Market Area #1, a price adjustment was necessary. It was further said that Eastern Subdivision never had a great deal of tonnage in Market Area #1, and never enough to justify the special low prices.

Appeal was made by Southern Subdivision for a price adjustment in New England, with a maximum absorption of 30 cents which shall be graduated downward where necessary. Also asked that Market Area #1 prices be supplemented by Area #2 prices, and that Eastern Subidvisions be required to reclassify mines in Barnesboro, Clearfield and Somerset districts so they will properly relate to their Nanty-Glo "A" mines to which Smokeless coals are correlated.

Reply of Eastern Subdivision, February 26, 1935: Eastern subdivision took exception to the complainant as to the price changes in January, 1934, claiming that Southern Subdivision #1 prices were not properly correlated until February 1935, and that Eastern Subdivision had complained for some time on Southern Subdivision's mine prices as a basis of correlation to tidewater markets. It was stated that the diverted tonnage estimated by Southern Subdivision could in no way be substantiated.

The three factors put forth by Southern Subdivision were criticized in the following way:

1. Establishment of Market Area #1 - Prices for this area were published at the request of the complainant that its policy of a single price for given price areas could be maintained.

2. Classification of coals - said to be an intra-subdivisional matter by Eastern Subdivision.

3. Reduction in all-rail rates to New England - made at direction of Interstate Commerce Commission to correct the then existing inequities.

Eastern Subdivision asserted that following the inception of the Code, October 1933, it had attempted to secure a meeting with the complainant but without success until January 9, 1934. Prior to this time, it was said, Southern Subdivision had a wide price advantage and for that reason refused to meet for correlation purposes. Southern Subdivision's statement that it became aware of price changes when entering the meeting of January 9, is misleading since the price list was known and published several days prior.

The prices published by the complainant were said to be correct, except that no correlation was effected on mine run coals since Southern Subdivision claimed this size of coal would not be shipped into the market.

A protest was made to the New Haven Railroad in respect to furnishing information on shipments since it was believed that such data would be used to the advantage of the complainant. The agreement on the traffic study was that it should be made jointly by both Subdivisions, but Southern Subdivision acted independently and attempted to secure the information in advance. The reason that Eastern Subdivision representatives could not become actively engaged in the study after the meeting with the New Haven Railroad, on December 28, was because of other hearings and meetings that required immediate attention.

Complainant admitted that it proposed a maximum freight absorption of 30 cents without complete information of the New England situation, and contended that representatives of the complainant had often supported the principle that absorptions should not exceed 25 cents per ton.

Eastern Subdivision failed to agree with the promise that the pre-Code tonnage flow to accustomed markets should not be hindered by the N.R.A. price set-up.

It was said that water transportation, and the intangibles involved, would not permit a correlation with coals which move all-rail. Again though the 3.70 would represent a fair minimum transportation charge, the customer may not be charged that amount since many producers in the Southern Subdivision own their own vessels and can add to the mine price any amount they wish. It is pointed out that the $3.70 is arbitrarily used by the complainant in the illustrations of delivered prices at certain New England points.

Eastern subdivisions claimed that it had given the classification of coals a long and intensive study. Southern Subdivision, on the other hand, had only classed its mine run coals on a basis of coarseness.

It was held that if Southern Subdivision's appeal is granted it will have an absorbing privilege in the boating and handling charges, and an additional privilege of 30 cents. Again stated that the classification of coals was entirely within the province of the Subdivision.

Reply by Southern Subdivision No. 1, February 28, 1935: This reply was to Eastern Subdivision's second answer entitled "General Statement of Position of Issues Involved", of which there is no record. The fact, however, that the first answer of Eastern Subdivision was February 26, and the points in that answer are closely related to this reply, suggests that little is lost by not having the second answer.

Southern Subdivision denied that the issues involved in the New England case were the same as found for all tidewater movements. The tidewater market between New York and Hampton Roads was said to be one dealing with tidewater coal, while the New England market is definitely affected by the all-rail movements.

It was claimed that Southern Subdivision had no desire to correlate on a f.o.b. mine basis, but supported a delivered basis. Eastern Subdivision's contention that Smokeless producers largely own the vessels and facilities by which their coal is shipped was denied, and information was included to show the ownership and control of water facilities. Held that only 20 per cent of Southern Subdivision's producers' coal is carried in their own vessels and handled over their own docks.

Summary of Contentions Covered in Briefs of Southern Subdivision No. 1, March 6, 1935: At the request of the Chairman of the N.C.B.A. a summary of the various contentions presented by Southern Subdivision was presented. Nothing new was presented in the summary except proposed regulations for controlling the $3.70 arbitrary.

It was suggested that freight absorptions would be allowed on the exact tonnage shipped to the listed destinations at the rate per ton stipulated for the destinations involved only when the following requirements were met and certified by the Smokeless Code Authority Bureau:

1. When the delivering agent sells and bills the tonnage involved to a permitted destination at Code prices plus the arbitrary of $3.70, plus the published inland rate.

2. The producer or his New England agent shall submit to the Bureau a copy of invoice and freight bill of each shipment.

3. Invoices and freight bills must contain full description as to kind and size of coal, and freight absorption.

Southern Subdivision again gave attention to two questions which it emphasized previously:

a. Is Eastern Subdivision justified in the prices set up in Market Area #1, or should Market Area #2 prices be restored for the entire territory?

b. Is Southern Subdivision entitled to a 30 cent maximum absorption to destinations which cannot now be reached on a parity with Nanty-Glo Class "A" coals?

Memorandum from Eastern Subdivision, March 14, 1935: Eastern Subdivision contended that if Southern Subdivision believed prices in Market Area #1 were not proper, facts should be presented to show that prices are too low, something that has not yet been done except through general statement. These prices were said to have been made

after a good deal of study; were accepted in a correlation agreement with Southern Subdivision No. 1, according to which no change was to be made until a traffic study on the New England situation had been completed.

With respect to the 30 cent maximum freight absorption, it was claimed that no means of policing destination prices existed because of the varying nature of boat and dock charges. Reference was made to a statement of a representative of the Southern Subdivision who admitted that a great portion of the tonnage going to New England is laid down on the dock and picked up afterward. It was further claimed that much of the tonnage lost its identity when reloaded at the docks.

Reply by Southern Subdivision No. 1, March 15, 1935: It was said that Southern Subdivision had protested Market Area #1 prices for a year, and had given a great deal of attention to this matter in its brief. No cooperation had been received from Eastern Subdivision in compiling data on the traffic situation in New England.

Decision and Opinions of the National Coal Board of Arbitration, March 18, 1935: The Board said the complaint averred that the unfair competitive conditions in New England result from the lowered prices established by the respondent for the territory known as Market Area #1, early in 1934; and since that date freight rate reductions to New England have taken place. Complainant asks that Market Area #1 be abolished and Market Area #2 prices apply, and that a maximum absorption of 30 cents be allowed.

The Board recognized the 30 cent absorption as of primary importance. Admitted there was a good reason for such a practice since competition between producers is in consuming markets. The fair competition contemplated by the Code must exist in respect to the delivered price to the consumer, and to deny the privilege of equalizing to a proper extent would lessen competition in many cases. Purpose of Code is not to lessen competition but to make it fair. But equalization must be confined to proper limits; the absorptions should not make the transaction uneconomical, either in the sense of burdening producers as to minimum wages, or preventing the sale of coal by others in their usual and normal markets.

The Board believed that Market Area #1 caused certain unreasonable and unjustifiable inequities in respect to consumers situated near the border line as well as the complainant. Again, freight rates have been reduced since Market #1 was established.

The Board held that coal shipped by the respondent moves by railroad and has definite freight charges. Freight charges paid by the complainant are indefinite because of the water and dock factors. Insufficient evidence was presented on the $3.70 arbitrary, it was said, and this demanded further study.

Findings

1. A maximum absorption of 25 cents per net ton allowed.

2. Respondent shall put into effect in Market Area #1 the same prices as are in effect in Market Area #2.

3. That both parties should, within 10 days of this date, agree upon a figure which would be fair and reasonable as to water and dock charges; and failing to do so the matter will be submitted to the Board for decision.

4. When the water and dock charges are fixed, the delivered cost of coal from the subdivisions shall be the published price plus transportation costs.

5. The 25 cents absorption shall not be allowed until proof is furnished of the actual payment of the cost of transportation in the manner proposed to be established, to wit: the parties hereto shall within the next 10 days agree upon a method of supervising transportation charges.

(One dissent was registered among the full Board of five members that took part in the case.)

Petition of Eastern Subdivision for Postponement, Rehearing, and Reconsideration, March 29, 1935: Eastern Subdivision said it did not establish lower prices for Market Area #1, when as a matter of fact, in its correlation agreement, February 1934, the prices were increased, resulting in an absorption of 35 cents for Southern Subdivision on nut and slack, and slack coals, said to be the bulk of the southern tonnage.

From the statistics compiled by Research and Planning, N.R.A., a comparison of costs and prices was given. The complainant had costs of $1.66 per ton, and Eastern Subdivision had costs of $1.73 per ton. Shown that Southern Subdivision Class F slack coals had a price 26 cents below costs, while Nanty-Glo Class A slack coal was 2 cents above costs. Prices of other coals above or below costs:

	Eastern Subdivision	Southern Subdivision
N. & S.	+ 17 cents	- 11 cents
R. O. M.	+ 32 cents	+ 9 cents

Said it was clear that Southern Subdivision lost on the New England trade since the larger part of its tonnage was nut and slack, and slack.

It was said that Western Pennsylvania and Northern West Virginia had correlated their prices with Eastern Subdivision, and any change in the New England prices would disturb the price set up of all three Subdivisions. It would be unfair to raise Eastern Subdivision's prices without changing the prices in these other two Subdivisions.

Again Eastern Subdivision protested the water and dock charges in the absorption basis. In reference to the reduction on New England freight rates, it was stated that their effect was much less than had been asserted.

Eastern subdivision contended that prices published by Southern Subdivision constitute dumping prices. The complainant was said to already enjoy a 35 cent absorption on nut and slack, and slack coals,

and the additional 25 cents would make the total absorotion amount to 60 cents.

Reply by Southern Subdivision No. 1, in Respect to Eastern Subdivision's Petition for Rehearing, April 4, 1935: Southern Subdivision said it had no objection to a rehearing on the $3.70 arbitrary, but objected to covering other matters that had been previously decided. Claimed that even if Eastern Subdivision did not lower prices as alleged, the date on which these prices were madevould not justify them because no normal tonnage flow was to be protested in Market Area #1. A summary of Nanty-Glo, Class A, R.O.M. prices was given.

Date	Area # 1 Prices	Area # 2 Prices
10/3/33	$2.15	$2.15
10/29/33	2.15	2.15
December	2.15	2.15
1/1/34	1.90	1.90
1/15/34	1.90	2.15
2/6/34	2.05	2.15
4/1/35	2.30	2.40

The above prices were presented to show that Eastern Subdivision did lower prices for Market Area #1.

Notice of Postponement of Rehearing, April 17, 1935: A notice from the N.C.B.A. stated that the rehearing, scheduled for April 15, had been postponed until April 23.

Closing Out of Docket #1: The N.C.B.A., through a notice, May 20, 1935, stated that Docket #1 would be closed out as of May 27, 1935, provided that any additional written briefs may befiled by any interested party on or before that date.

DOCKETS 4, 5, 6 AND 7

Prices for Market Area #11, Lake Cargo Coal and By-Product Coal: These four dockets cover a controversy regarding prices for Market Area #11, lake cargo coal, and by-product coal. Southern Subdivision No. 2 is the complainant in each case, while the respondents are Southern Subdivision No. 1, for Docket 4; Northern West Virginia for Docket 5; Ohio for Docket 6; and Western Pennsylvania for Docket 7. The four dockets will be considered in relation to each other because of the similarity of issues, while Docket 4 will be covered more in detail in order to bring out the different questions involved in the controversy.

General Brief of Southern Subdivision No. 2, February 25, 1935: This brief, while of later date than the briefs presented for the par-

ticular dockets, has a short history of the case, and provides information on the origin of the controversy between Subdivision No. 2 and the other Subdivisions. Part of brief contains the complaint against Southern Subdivision No. 1, but much of the same material is contained under an earlier brief which will be summarized in a later part.

It was said that when the Code was established, the producing territory of Southern Subdivision No. 2 was represented by a marketing agency, Appalachian Coals, Inc., and was able to publish prices within a short time. The northern Subdivisions were highly competitive and experienced difficulty in setting up prices, and finally in May 1934, met in New York to work out a definite program, which resulted in an agreeable plan for Market Area #11. Southern Subdivision No. 2 had not participated in the negotiations, and was accused of refusing to correlate prices in this Area. The part taken by Southern Subdivision No. 1, however, is not clear either as to the negotiations carried on by the northern Subdivision or its relations with southern Subdivision No. 2.

Southern Subdivision No. 2 presented a base coal and its price in a meeting with other Subdivisions at Washington, D. C., September 8, 1934. With the exception of Ohio, other Subdivisions were said to have failed to name a base coal. These other Subdivisions were said to have favored a correlation of prices based on certain seam designations or coal from indicated mines, a procedure not favored by Southern Subdivision No. 2.

The complainant claimed that prices published by other Subdivisions in Market Area #11 are at least 15 cents too low, and an adjustment should be made.

The base coal used by Southern Subdivision had the following analysis:

Volatile Matter	34.00	Sulphur	1.00
Fixed Carbon	59.00	B.T.U. Dry	14,000
Ash	7.00	A.S.T.	2,750
Moisture	3.00	Price f.o.b. mine	$1.80

Allowance was made for differences in fusion:

2750 and up	Base	2300 - 2449	Minus 15¢
2600 - 2749	Minus 5¢	Under 2300	" 20¢
2450 - 2599	" 10¢		

The allowance for fusion was also to take care of sulphur content as in nearly all cases high sulphur coal was said to be low in fusion.

Adjustment was made for size in the following manner:

3" to 2¼" N.& S.	Plus 5¢	¾" to ½" Slack	Minus 10¢
2" to 1½" N.& S.	Base	3/8" to 0" Slack	Minus 15¢
1½" to 7/8" N.& S.	Minus 5¢		

DOCKET 4

Southern Subdivision No. 2, Complainant, vs. Southern Subdivision No. 1, Respondent, in the Matter of their All-Rail Prices in Market Area #11; their Lake Cargo Prices, and their All-Rail, Tidewater and

Lake Cargo By-Product Prices.

Complaint was received by the National Coal Board of Arbitration on February 18, 1935, consisting of a protest by Southern Subdivision No.2 as to General Price Schedule # 14, effective December 1, 1934, and supplements thereto quoting (a) Market Area #11 all-rail prices; (b) Lake Cargo prices; (c) By-product prices -- all-rail, tidewater and lake.

Market Area #11 Prices: It was contended by the complainant, Subdivision No. 2, that it had a price disadvantage in Market Area #11, because of the relatively low prices published for this territory by Subdivision No. 1. Prices and analyses were shown on 5/8" and under slack as compared with the complainant's 2" nut and slack, the former said to make up the major portion of the slack shipments moved from Subdivision No. 1, and it was said that these prices were 25 to 30 cents lower than the prices of Subdivision No. 2, on a comparable coal. It was stated that the respondent had freight differentials ranging from 10 to 25 cents to destinations in Market Area #11, north of the Ohio River and, where the 10 and 15 cent differentials applied, prices were from 15 to 20 cents too low. Also noted that Southern Subdivision No. 1 has freight advantages on tidewater and eastbound coal and southbound coal with some exceptions.

Lake Cargo Coal: Through tonnage data for the year 1932 to 1934, inclusive, it was shwon that Southern Subdivision No. 1 had bettered its position in the lake trade to a greater extent than the complainant. Said to have been caused by higher prices in high volatile territory, i.e., Southern Subdivision No. 2, after the marketing agency was established there in April 1933.

By-Product Prices: It was claimed that the major part of the by-product shipped from Southern Subdivision No. 1 took a mine price of $1.80. The same coal takes a price of $2.10 in Subdivision No. 2, and the latter price should apply for the respondent's coal that took the $1.80 price.

Replies of Southern Subdivision No.1, February 26, 1935, and February 28,1935: Southern Subdivision No. 1 claimed that the complainant was not against present price relationships, but made an actual appeal to establish a new level of prices. The analyses of coals cited by the complainant were said to be incorrect. Data were given to show that 5/8" slack amounted to 45 per cent of the steam coal production of Subdivision No. 1. Into the market in question, it was indicated that the following shipments were made:

1 - ½"	stoker	-- 23,000 tons
1¼ - ¾"	screenings	-- 84,000 tons
5/8"	slack	-- 91,000 tons

It was said the assertion that a friable coal of 5/8" size from Subdivision No. 1 was competitive to a hard structure coal of 2" size was wrong, since the minimum size relation cannot be less than size for size. The formula used by the complainant was said to prove that the $2.00 price for 2" stoker, as quoted by the respondence in its "F" classification, is 10 cents too high. This, in addition to unfavorable freight differentials, places Southern Subdivision at a large disadvantage. At Chicago, Southern Subdivision No. 2 allows a freight absorption of 20 cents on stoker

coals, which was claimed to place a price disadvantage of 65 cents on the respondent. Held that Southern Subdivision No. 1 was able to secure only 200,000 tons of steam stoker business in 1934 in an area to which it shipped 11 million tons of coal. Stated that the respondent's freight advantages to the south and east were not as great as had been contended by the complainant. It was further stated that Southern Subdivision No. 1 had been losing tonnage in Area 11 and, hence, no complaint on prices could be made for that territory.

Lake Cargo Coal: Southern Subdivision No. 1 said it had a price disadvantage ranging from 30 to 90 cents on steam coal at Duluth and Superior.

By-Product Coal: Said that the price of the respondent's by-product coal was between $1.75 and $2.00, with approximately half being sold at the $2.00 price. Reference was made to the oral hearing where it was stated that Class A by-product of coals of Southern Subdivision No. 2 sold at prices 25 to 60 cents higher than Beckley and Pocahontas coals during the years 1928 - 1930 inclusive.

Supplemental Brief of Southern Subdivision No. 2: It was said that the "base coal" of Southern Subdivision No. 2 applied to 10 per cent of the mines in that Subdivision since April 17, 1933 when the marketing agency, Appalachian Coals, published its first price list. At the same time, it was admitted that certain coals could be classified on a higher level than the base coal providing that the $1.80 coals could be properly correlated with comparable coals in Southern Subdivision No. 1. But it claimed that Southern Subdivision No. 1, and other Subdivisions, with coals sold at favorable differentials as against the complainant's prices, should not insist that the prices on nut and slack be increased in Southern No.2. It was stated that the prices in question had been objected to since the Subdivisions of Division 1 had been meeting together.

The 5/8" slack produced in Southern Subdivision No. 1 was held to be of vital concern to the complainant because of the favorable differential, and its comparability with 1½" and 2" nut and slack of Subdivision No. 2. Respondent's connection that "the minimum size relation cannot in common sense be less than size for size" was opposed on the grounds that the relative value of the coals would be overlooked. It was also claimed that the freight rate situation described by the respondent was incomplete.

For a number of years, it was said, Southern Subdivision No.2 has had a good market in the Southeast, but is now threatened by the low prices of its competitor, Southern Subdivision No. 1. Reference was made to tonnage figures for other parts of Market Area #11 as an illustration of how the respondent increased its tonnage volume more than Southern Subdivision No.2.

Lake Cargo Coal: Again the larger increase of Southern Subdivision No. 1 in the lake trade is given attention. It was further said that the prices used by the respondent were contract prices effective on and after the dates claimed. The respondent was said to have

refused to meet with other Subdivisions in the Spring of 1934 to establish prices, making its prices voluntary and subject to complaint in event other Subdivisions can show losses in movement. It was asked that lake prices for Southern Subdivision No.1 be increased. Suggestion was made that prices quoted ex-Northwestern Docks be dropped because of the various factors that affect the northwest market and destroy the mine differentials.

By-Product Coals: Low volatile coals used in the by-product coal mixture were held to result in a larger coke yield as compared with high volatile coals, though the yield on by-products, such as gas, is reduced. The larger portion of coke result in a net gain, making it desirable to use low volatile coals. Thus, by-product coal Subdivision No. 1, with a price of $1.65, was said to have an advantage in the market. That by-product prices were higher on high volatile coals, 1928-1930, was due to the fact that Southern Subdivision No. 1 had a surplus of slack which was moved at a relatively low price.

Decision on Docket 4, March 22, 1935

Prices in Market Area #11: The National Coal Board of Arbitration considered the complaint on prices in Market Area #11 from (a) price advantage of the respondent, and (b) the comparison of quality of respondent's coals with a theoretical base coal priced by the complainant at an arbitrary figure.

In respect to (a), the Board was unable to interpret the statistics of the respondent as indicating any shift of tonnage from Southern No. 2 to Southern No. 1.

As to (b), the comparative quality of the coals in question, the Board held that correlation was still indefinite and unsatisfactory. In addition, it was said that the complainant had not presented any analysis of actual coals, while other facts to substantiate the various claims were not in evidence.

The Board dismissed the complaint.

Lake Cargo Coal: Here again the Board held that the evidence failed to show any shift in tonnage at the expense of Southern Division No. 2, and the complaint was dismissed.

By-Product Coal: This complaint was dismissed on authority of decision rendered on by-product prices in Dockets 8, 9, and 14.

Docket 8 was concerned with the proposed elimination by Eastern Subdivision of a differential in the price of coal as between users of such coal for steam raising purposes and users of such coal by the manufacturer of by-products therefrom. Complaint was entered by Southern Subdivision No. 2, which stated that the custom had been for by-product coals to be priced at a premium over steam quality coals. The Board, in a 3 to 2 decision, held that if the classification of coals is based on the inherent quality of the coals and reflects in the price structure the marketability of the coals, it is neither

logical nor proper to charge a premium for one class of consumer as against another unless there are other factors which must be taken into consideration. The complaint was thus dismissed. Dockets 9 and 14 were similar and decided on the same basis.

Summary of Dockets 5, 6, and 7

The issues in Docket 5 were the same as in Docket 4; prices for Market Area #11, lake cargo coal, and by-product, but with the Northern West Virginia Subdivisions as respondent. Docket 5 was a complaint on the all-rail prices established by the Ohio Subdivision in Market Area #11; while Docket 7 was in connection with the prices established by Western Pennsylvania in Market Area #11, prices on lake cargo coal and the additional phase, namely, vessel fuel, and prices on by-product coal. The Board dismissed the complaints with the same reasoning contained in the decision on Docket 4.

A short description of the respondent's brief submitted for Docket 6 will be given below for general purposes of information. The files appear incomplete for Docket 5, and for that reason it will not be given treatment. The detailed complaint filed by Southern Subdivision No. 2 on Western Pennsylvania's prices was not answered by the respondent.

DOCKET 6

Ohio Subdivision as Respondent

Prices in Market Area #11: The respondent claimed that it was not in competition with the theoretical coal presented by the complainant, Southern Subdivision No. 2. That it had one price on screenings 2" and down, whereas the complainant had various prices for these screenings. It was suggested that Subdivision No. 2 submit proper analytical data on its various coals. The respondent said it was not familiar with the analyses of the various Ohio coals given by the complainant, or did it know the formula employed in arriving at the suggested differentials. Allotments under the Adams Plan were given reference, and it was shown that for the last 9 months of 1934, Southern Subdivision No. 2 had exceeded its quota, while Ohio fell below the amount proposed for it.

On March 4, 1935, the Ohio Subdivision submitted a detailed compilation to supplement and support the arguments contained in its briefs of February 23, and March 1, which have been summarized above. The following includes many of the points given in the supplemental brief:

1. Over 90 per cent of the Ohio tonnage is sold in Market Area #8, #11 and Lake. Various Subdivisions were said to use these markets as a dumping ground. Asked that a maximum spread of 25 cents be established on each individual classification as between the different marketing areas for each size and grade of coal, f.o.b. mine, in order to limit dumping in unnatural markets. A greater limitation on freight absorptions was also asked. A protest was made of the practice of permitting differentials on off-time railroad fuel.

2. Contended that the producing field nearest the consuming market should set the base price to which the more distant fields should correlate. The Hocking District, it was said, depends for its domestic market on the area comprising Ohio, half of the lower peninsula of Michigan, and the Northeastern quarter of Indiana; a market that will quickly disappear for Hocking if prices are not properly correlated. In this respect, it was suggested that domestic prices in Subdivision No. 2 be raised 20 cents per ton. As to steam prices, it was the practice, prior to the Code, to make mine prices on Ohio coal the same as for coal of a like size in Subdivision No. 2. This practice has been ignored since the Code, and a new correlation is necessary to protest the Ohio steam coals. Argument was advanced for a new correlation of prices in Market Area #8, for which Ohio #8 was suggested as a base.

It may be noted that the main answer made by the complainant to Ohio's argument was that the price formula used by Southern Subdivision No. 2 has worked satisfactorily and can be applied by other Subdivisions for Market Area #11. (See Answer, by Southern Subdivisional Code Authority, March 4, 1935.)

Docket 38

Division III vs. Southern Subdivision No. 2 of Division I

Price Reductions in Southern Appalachian Price List No. 6: The complaint of Division III was directed at certain price reductions published by the respondent in Southern Appalachian Price List No. 6, as detailed in proposed correction sheets to Price Circular No. 15, effective February 11 and 23, and March 5, 1935. This is the only docket on the recorded calendar wherein there is a controversy between parties of different Divisions.

Brief of Complainant, April 4, 1935: Division III developed the following points:

1. Reasonable effort had been made to settle the controversy. Meetings between the two parties had taken place in April, August, September, and December, 1934. Nothing resulted from the last three meetings, while in the first certain agreements were reached as to a proper basis of correlation.

2. Complaint has come, in the first instance, from the Tennessee-Georgia District of Division III. The basis between the coals in this District and coals in Southern Subdivision No. 2, according to the meeting of April 1934, was to place the lowest priced coals of the Southern Appalachian territory of the respondent on the same level as coals of the Sewanee seam of Division III. Coals of the Ravenscroft and Soddy seams, located in Division III, were to be 10 cents lower.

3. The above relationship has been continually disturbed by the appearance of coals from Southern Subdivision No. 2 in the agreed price level though they had been taking a higher quality rating. Recently, prices in the Chattanooga market have been disturbed by attempts

to reduce prices on certain Appalachian coals below the Dean seam coals of Subdivision No. 2, which in turn are related to Southern Tennessee coals. These proposed reductions are found for coals from Stearns Coal and Lumber Co., seams One and Two of the Kentucky field, the prices for which now equal or are lower than the prices of Dean seam coals.

4. In April of last year, there were 9 coals in the price list of Southern Subdivision No. 2 which had a price below the Dean seam coals, and at present date there are 14 coals. Recently an application was made to reduce the price of Dean seam coals by 15 cents per ton, a procedure that would disturb all the price relationships.

5. Since 75 per cent of the coal produced in the Tennessee-Georgia District runs 2 x 0" and smaller, any reduction of price of the respondent's nut and slack would reduce the District's realization to the extent of 10 cents per ton.

6. Request entered that the Board discontinue any prices entered by the respondent on coal moving to the Georgia and Chattanooga markets, which are lower than the prices effective January 1, 1935.

Response of Southern Subdivision No. 2, April 20, 1935:
Southern Subdivision No. 2 emphasized the points below in its answer to the brief of Division III:

1. Paragraphs 3 of Amendment 2 of the Code prohibits the destructive selling by a district with a lower wage scale in the normal consuming markets of any district which is subject to higher rates of pay. This provision gives to Southern Subdivision No. 2 the duty of establishing base prices on coals which compete with coals of Division III. Amendment 2 gave a base rate on inside skilled labor at 80 cents per day less for Division III as against Southern Subdivision No. 2, a wage differential that requires protection for Southern Appalachian operators.

2. In the meeting of April, 1934, it was recommended that Southern Tennessee producers of Division III, "x x x shall not make prices in any competitive territories less than the delivered prices of comparable domestic and steam coals from Southern Subdivision No. 2 of Division I". Another recommendation was that a permanent committee be appointed, " x x x to consider any inequalities that may develop from the application of these general rules". The committee was necessary because of the meagre information on coals of either Southern No. 2 or Division III. A tentative correlation was set up as a starting point. Later meetings showed that the correlation needed adjustment, but little success was had in making the necessary changes.

3. The price adjustments and changes proposed by Southern Subdivision No. 2 are warranted according to an analysis of the different coals. One of the proposed changes is to give Clinchmore 3/8" x 0" coal, which is now delivered into Chattanooga at $2.80, a 10 cent lower price. This coal now has only a differential of 1 cent under 3/4" x 0" nut-slack produced in the Tennessee-Georgia district; a differential

not reasonable due to the size differences. Reduction in prices of coals produced in the Dean seam is required because of the low quality of those coals, which prevents them from competing with other Southern Appalachian coals.

4. The Stearns coal in question is of very low quality, which requires a price as low as proposed.

5. At the time of the tentative correlation agreement, there was no understanding that the Sewanee seam coals were to be priced on an equal delivered basis with the lowest priced coals of the Southern Appalachian district of Division I. Rather the understanding was that the Sewanee coals were to have the same basis as the Dean seam coals, and that Southern No. 2 would have the right to classify other coals in its district above or below the Dean seam prices to enable them to compete on a fair basis with other districts.

6. Believed that the Tennessee-Georgia District will not suffer losses if proposed prices are established since its prices will not be lowered. This district has relatively lower prices to other markets, some of which appear to be in violation with Amendment 2.

7. Tonnage data show that the Tennessee-Georgia district has bettered its position considerably in the Chattanooga market in the years 1932 - 1934.

8. An analysis of 2" nut and slack from a mine in the Tennessee-Georgia district shows the superiority of that coal as compared with a like size coal from the Dean seam.

Decision of the National Coal Board of Arbitration, May 1, 1935:

In reference to Amendment 2 of the Code, the Board held that the respondent overlooked the fact that provision was made to prevent coals from Division III invading markets of other Divisions or Subdivisions at a known competitively low price. In this case, the situation was said to be reversed as Southern No. 2 seeks to invade the home market of Division III through a price reduction prompted by a losing tonnage said to be caused by an improper correlation.

It was stated that the comparison of Division III and Southern No. 2 coals used by the respondent was questioned by the complainant on good grounds. The latter also showed that, as between these coals, the Southern No. 2 coals already had a favorable differential of 11 cents instead of 1 cent as indicated by the respondent.

The "sluggishness" and "heavy coking" behavior of Sewanee seam coals as against Dean seam coals, as cited by the complainant, were considered by the Board as properties not subject to measure. If these properties did exist as described, however, it was stated they would probable be offset by the ash softening temperature claimed by respondent to be in favor of Sewanee coals.

The Board concluded that the competition from which the lowest grade of Southern Appalachian mines are suffering came not from Division III but from mines in their own Subdivision. This contribution was attributed to the fact that a reduction had been made on higher grade coals of Southern Appalachian territory which affected the markets of the lower grade coals of the same Subdivision and, to effect an adjustment, the proposal was to lower by 15 cents the price of the inferior coals under the prices correlated with Division III.

Shipment figures submitted by the respondent to show that Division III had been bettering its position in the Chattanooga market as compared with the Southern Appalachian fields were criticized by the Board as tons were used in one instance and cars in another.

By a four to one vote, the Board sustained the complaint of Division III which protested the proposed price circulars.

Petition Made by Southern Subdivision for a Rehearing of Docket 38: Southern Subdivision No. 2 accepted the Board's decision with disapproval, and on May 3, 1935 petitioned for a rehearing of the case. The Docket was reopened on May 8.

Southern No. 2 made reference to price schedules in order to show that prices had not been generally lowered after April,1934. It was said that prices of only 17 of 101 Southern Appalachian mines had been reduced, while prices of 2 mines were increased, the changes applying to low grade as well as high grade mines.

Other points developed by Southern Subdivision No. 2 were:

1. That the tonnage figures formerly presented show that the market of Division III has not been invaded by Southern Appalachian coals.

2. That the analyses of coals presented were representative.

3. That the Board must have confused another size of coal in believing that the differential on 2" nut and slack was 11 cents instead of 1 cent.

4. That the low volatile content and other qualities of Sewanee coals are subject to measure since these features bring higher prices.

5. That the competition of Dean seam coals is also with coals of Division III.

6. That the figures on cars can be made comparable with the tonnage figures by using 50 tons to a car as a conversion factor. This will clearly indicate that the Dean seam mines have been losing tonnage.

Brief of Southern Subdivision No. 2 in Response to Oral Testimony, May 15, 1935: This brief, though submitted in the rehearing proceedings, was in reference to the oral argument presented by complainant on April 24, 1915. It was said in this brief:

1. That the Dean seam coals did not have the lowest prices as a result of the correlation in April 1934.

2. That the Dean seam mines did not ship to the Chattanooga market before 1929, as claimed by the respondent, is incorrect.

Other argument gave in detail the points already covered in the petition for rehearing of May 3, 1935.

Reply by Division III, May 20, 1935: Division III entered further detail to support its former position. Among other things, it also claimed:

1. That witnesses testified that Dean seam coal was not shipped into the Chattanooga market prior to 1929.

2. That the prices referred to by the respondent did not include the proposed reductions.

3. That the National Coal Board of Arbitration was not wrong in assuming that a 11 cent differential already existed on the 2" nut and slack Dean seam coals in the Chattanooga market.

Supplemental Decision of The National Coal Board of Arbitration, May 24, 1935: The Board reaffirmed the original decision of May 1,1935, holding that the complaint of Division III should be sustained.

H. Realization Under The Code

The larger part of price discussion in the previous sections of this chapter has been in connection with the price relationship between sizes and kinds of coal, between Divisions, and between Subdivisions. Another phase of much importance under price-fixing is that of realization, i. e., the composite of prices or the price level. This phase directs attention to the ratio of price to cost, and the degree of stabilization in the price structure.

Brief reference only need be given here on realization for the years prior to the Code (See Chapter I, section on Mine Realization). The downward trend of realization, particularly between 1925 and 1933, is one of the significant factors in connection with the long depression of the industry.

Monthly realization data are not available for the months prior to the Code, but it is generally accepted that the lowest level for realization, since the War and probably for several decades, was reached during the first half of 1933. Realization for 1933 amounted to $1.34 per ton as compared with $1.31 for 1932 but, of course, Code prices were in effect for the last quarter of 1933. For 1934, the only full year under the Code, realization advanced to $1.75 per ton, an amount nearly as great as the $1.78 for 1929.

The statistical system made possible under the NRA provided a means to obtain and publish realization data in greater detail. (The statistical methods for obtaining information on the industry are described in Appendix I). Thus, realization figures are found not only for territorial designations but by months. These data are presented in detail in charts (in Appendix), and briefly in the table below, with both presentations in such form as to be readily comparable with the cost data in Chapter V. The NRA realization figures do not include tonnage of captive mines, which is a variation in method as compared with the Bureau of Mines' figures that include captive coal.

Realizations, Costs and Margins, Divisions I, II and III

5-Month Period, November-March 1934 (1)
10-Month Period, April-January 1935

Division and Subdivision	November 1933-March 1934 (5-Month Period)			April 1934-January 1935 (10-Month Period)		
	Realization	Cost	Margin	Realization	Cost	Margin
(a)						
Division I	1.6387	1.5989	.0398	1.9194	1.9058	.0136
Division I - North	1.6338	1.6028	.0310	1.9004	1.9296	- .0292
Division I - South	1.6440	1.5947	.0493	1.9377	1.8829	.0548
Eastern Subdivision	1.7230	1.7328	- .0098	2.0603	2.1182	- .0579
Western Pennsylvania	1.6675	1.6443	.0232	1.9085	1.9408	- .0323
Ohio	1.6785	1.5243	.1542	1.8584	1.8031	.0553
Panhandle	1.5668*	1.5854*	- .0186	1.7542	1.7272	.0270
Michigan	2.9209	2.7140	.2069	3.1625	3.1848	- .0223
Northern West Virginia	1.3320	1.3151	.0169	1.6214	1.6671	- .0457
Southern # 1	1.7387	1.6570	.0817	2.0369	1.9473	.0896
Southern # 2	1.5684	1.5424	.0260	1.8447	1.8199	.0248

* 4-Months period; March data not available
(a) Exclusive of Western Kentucky
(1) Data from "Bituminous Coal Statistics," NRA

Realizations, Costs and Margins,
Divisions I, II and III
(continued)

5-Month Period, November-March 1934 (1)
10-Month Period, April-January 1935

Division and Subdivision	November 1933-March 1934 (5-Month Period)			April 1934-January 1935 (10-Month Period)		
	Realization	Cost	Margin	Realization	Cost	Margin
Division II (a)	1.5091	1.3453	.1638	1.6292	1.5448	.0844
Illinois	1.5337	1.3690	.1647	1.6396	1.5531	.0865
Indiana	1.4417	1.2800	.1617	1.5985	1.5203	.0782
				(b)	(b)	
Division III	1.9103	1.9483	- .0380	2.2539	2.2983	- .0444
Divisions I, II, and III	1.6171	1.5522	.0649	1.8701	1.8439	.0262

(1) Data from "Bituminous Coal Statistics," NRA
(a) Exclusive of Iowa
(b) 9-Month period; January not available

One noticeable feature of the price level under the Code was that it corresponded closely to the cost level. This is a remarkable showing for several reasons. It is to be remembered that the individual prices were established with little cost and price data on hand, and with wage increases and other cost increases in view. In addition, there was that troublesome factor of pre-code contract tonnage. Divisions I, II, and III, combined, had a realization of 1.62 for the 5-month period, which afforded a margin of 6.5 cents over costs. Division II was largely responsible for the size of the margin, since the realization for Division I was 4 cents above costs while the realization for Division III was below costs to the extent of 4 cents. For the 10-month period, April-January 1935, the margins narrow considerably. Divisions I, II, and III, together, had a realization that was only 2.6 cents over costs; Division I had a margin of 1.4 cents; the margin of Division II decreased to 7.8 cents; and the realization of Division III was still below costs. Data for Divisions IV and V were not complete enough to be included in the comparisons.

Differences in margins are found for the Subdivisions. For the 5-month period, Ohio and Southern # 1 enjoyed the largest margins in Division I, while Eastern Subdivision and Panhandle had realizations under costs. For Division II, Illinois and Indiana both had substantial margins; 16.5 cents and 16.2 cents respectively. For the 10-month period, Southern # 1 maintained its margin but Ohio's margin decreased to 5.5 cents, while the realizations for Eastern Subdivision, Western Pennsylvania, Michigan and Northern West Virginia, fell below costs. Illinois and Indiana had smaller margins for the 10-month period.

The charts give month by month comparisons of realizations and costs, November 1933-January 1935, with separate showings of realizations from coal sold under Code prices and coal sold under contracts made prior to the Code. Margins above costs are shown by black areas, and the margins below costs by the cross-hatched areas. The proportions of sales made under Code prices are presented on the lower part of the charts.

Little explanation need be given to the charts, except to point out several interesting features. For Divisions I, II, and III, combined, the margin between realization and costs remains small and uniform for the 10-month period, April to January 1935, aside from some variation in January. The margin is more irregular for the 5-month period ending in March 1934. The latter result may be related largely to the decrease in pre-code contract coal which had occurred in large amounts over the 5-month period. Similar tendencies will be found in the chart of Division I. The chart for Division II is quite irregular. Margins below costs are found between May and August, with plus margins for the other months. The decrease in pre-code contract tonnage is more gradual as against the above charts. Division III has more variation than either Division I or II. The charts clearly illustrate how price adjustments were made in April 1934 to meet the wage advances of that time.

Although prices were increased noticeably under the Code, there is no evidence that the Code price level was unreasonably high. It is true that realization advanced from $1.34 in 1933 to $1.75 in 1934, an increase of 30 per cent. A still larger increase would be found, no doubt, if realization for the first half of 1933 could be compared with the original Code prices. At the same time, it is to be remembered that the industry was operating at a loss for a number of years before the Code. This was true in spite of low wages and forced economies. In other words, an increase in price would have been necessary to cover the previously low costs. Under the Code, wages advanced sharply and other costs increased. These two sets of conditions, a relatively low price before the Code and large increases in costs due to the Code, meant that a marked increase in realization was necessary if costs were to be met. While an increase in price was necessary, it does not appear that unreasonable advances were made. The margins between cost and realization were small in most cases, amounting to only 2.6 cents per ton for Divisions I, II, and III, combined, Some criticism may be entered as to the price level because Code prices had to make up for the relatively low priced coal sold under pre-code contracts. This was true during the first few months of the Code, but during most of the Code period the proportion of pre-code contract tonnage was too small to affect realization to any degree.

The extent of price stabilization under the Code is apparent in the realization charts. For instance, the curve on realization for Divisions I, II, and III, combined, is practically flat for the 10 months, April-January 1935. The same is true for Division I. For certain Sub-divisions, such as Illinois and Alabama, the price level fluctuates noticeably. Information is not available to verify contentions that stabilization was breaking down rapidly during the last four or five months of the Code.

1. Summary: An absence of uniformity and standards in price fixing was a weakness early apparent in the Code. Methods of price fixing varies between Code Authorities. This was especially true as to classification. Disputes were quick to arise between the Code Authorities regarding the relationships of prices in common markets.

Another weakness of the early Code was the absence of provision for a central agency to adjudicate disputes. Many of the disputes arising during the first months of the Code were due to confusion and misunderstanding and could have been settled or reduced in importance through a central authority. In time, these disputes became more complex and involved, their effects became more widespread, while settlement became more difficult. The principle that price fixing was a Subdivisional matter was guarded closely, and it was only with reluctance that the industry slowly turned to a more central action. With the failure of voluntary agreement as a method of settlement, a procedure was established in June 1934, whereby advance notice was to be given on price changes, and the price changes were open to review of representatives of Code Authorities, marketing agencies, and the Administration. This tended to coordinate price activity and eliminate the confusion often following unexpected changes, but it did not provide a method for handling controversies already in existence. The latter was given attention when the Presidential Members of Division I (excepting Western Kentucky) were organized as a board, also in June 1934, to hear and render opinions on disputes. This board, without any definite authority, had little success in smoothing out the price difficulties.

Little information is obtainable on price compliance under the Code. It is generally known that price evasions took place, and failure in compliance was always a serious subject. Price evasions appear to have been mostly sporadic, and more common to some producing districts than others. The failure to specify a definite and effective means to police prices seems to have been one of the handicaps in respect to compliance.

It was not until the addition of Amendment 6, January 25, 1935, that major changes were made in the price provisions of the Code. This Amendment clarified and amplified price fixing, added a more definite price basis, and gave a procedure for handling controversies through a central agency, the National Coal Board of Arbitration. Amendment 6 became effective only 4 months before the end of the Code, and for that reason cannot be evaluated in terms of results. It is clear, however, that it was a great improvement. At the same time, it represented about the extreme limits in code organization with the problem of bituminous coal regulation still unsettled. Already progress had been made towards permanent legislation for the industry and, the day before Amendment 6 became effective, the Guffey Bill had been introduced in the Senate.

Bituminous coal price fixing was one of the major experiments under the N.I.R.A., and the results were extraordinary in certain aspects. A complex price system was established both upon short notice and with little precedent. The prices so established gave a realization that approximated costs. Stabilization appears to have been effected over the Code months. These were accomplishments in an industry that previously had no semblance of a price structure, that had suffered losses over a decade, and that had enjoyed no degree of stabilization.

APPENDIX I 1/

Statistical Reporting Under N.R.A.

It was early recognized that current factual data would be indispensable to intelligent administration of the Code. Although the Code, as submitted to the President for approval, did not make provision for statistical reporting, the President's formal approval, signed September 18, 1933, imposed a condition that:

> "(1) There shall be added to the first paragraph of Section 3 of Article VII of the Code the following sentence:
>
> All coal producers subject to the Code shall furnish to any governmental agency or agencies designated by the Administration such statistical information as the Administration may, from time to time, deem necessary for the purposes recited in Section 3(a) of the National Industrial Recovery Act and any reports and other information collected and compiled by a Code Authority, as heretofore provided, shall be transmitted to such government agencies as the Administration may direct."

Pursuant to this provision, a Bituminous Coal Section was set up in the Division of Research and Planning under the direction of F.E. Berquist. This unit numbered as many as 85 people at its maximum. One of the first assignments was to devise suitable forms on which individual mines were to report operating data required by this Section.

Form A provided for monthly statements of costs in detail, with a section for summarized total realization from shipments against contracts made prior to the Code, shipments on orders taken subsequent to effectuation of the Code, and certain other classes of shipments or disposition of the period's production.

Form B called for selling and administration costs broken down in detail, to be submitted by each operating company and covering the operation of whatever number of mines it operated.

Form C was designed to show the details of employment and earnings per pay-period, for each mine.

Form D called for monthly details of income from sales by sizes and grades of coal, use classes, and price zones, separated as to pre-Code contract shipments and Code-price sales; with inventory adjust to account for total production during the month of reporting.

1/ Prepared by Ellery B. Gordon

Form T was a greatly simplified blank for the use of small mines (under 150 tons output per month), and embraced a simple cost statement, employment data, and realization from sales. The scattering returns on these forms were very inadequate and incomplete; no summaries were prepared.

This statistical program developed not only the most elaborate body of first-hand data collected by N.R.A. from any industry, but admittedly the most representative (nearly 70 per cent of total production) and extensive accumulation of vital factual information ever provided for bituminous coal over a continuous period of equal extent.

Forms A and B served to establish a basis of cost relationships among constituent items and among mines in the same producing field; averages of cost by months by fields throughout a full cycle of seasons; basic average cost relationships among the larger groups of fields represented by subdivisions under the Code; and finally the average cost comparisons between the 8-hour day and the 7-hour day periods. The breakdown of operating data called for on Form A also provided a basis for projecting costs as reported for the number of days actually worked in any month to an estimated or approximate cost if the mines in the group had worked different numbers of days during the month.

Value of Employment and Earnings Data and Cause of Form C Discontinuance: The prime purpose of N.I.R.A. was to increase purchasing power by increasing payrolls. This purpose was unquestionably realized under the Bituminous Code. Coincident with this purpose was a decrease in the number of unemployed. The bituminous coal industry showed an increase in number of employees of about 40,000 in 1934 over 1933. The number of days worked by the mines also increased, as did the average annual earnings per man. (For details of these improvements see Chapter IV.of this study.)

Form C provided details of employment and earnings by principal occupations during a pay period; a frequency distribution of the number of men who worked various numbers of hours per period; another frequency distribution of the number of men who fell in each of eight earnings groups per period. It provided a basis for establishing averagesrelationships among occupational groups, for the first time available to a wage conference committee negotiating a new agreement. Form C perhaps performed its most valuable function in this manner in the early 1934 wage conferences which eventuated in Amendment 1 and the 7-hour day. The occupational relationships thus once established are continuously useful. Many objections to the basic form of the report in some particulars were the subject of long continued conferences. The main point of argument centered around the basis for reporting a "man-start". The form carried the following instruction with respect to column 26 - "Total man-starts":

> "Under 'mining, cutting, and loading labor' (item 107) use the following rule for determining the number of starts for employees on a tonnage basis: When a tonnage worker has been credited with two or more cars on the bulletin for any day it should be con-

Form T
NRA Bit. Coal

NATIONAL RECOVERY ADMINISTRATION
BITUMINOUS COAL

DO NOT FILL IN
Key Code No. _____

Report for _____ Mine.

Name of reporting company, firm, or individual _____

Address _____

I CERTIFY that this report has been compiled from the records of this mine, and is, to the best of my knowledge and belief, true and correct, for the month of _____, 193

_____ (Signature) _____ (Official title) _____ (Name of company or firm)

16—1601

Form T
NRA Bit. Coal

NATIONAL RECOVERY ADMINISTRATION
BITUMINOUS COAL

DO NOT FILL IN
Key Code No. _____

INFORMATION FOR SMALL MINES
(TO BE REPORTED FOR EACH MINE)

MONTH OF _____, 193

Location of mine: State _____ County _____ Field _____

Code authority No. _____ Name of mining district _____

Name and/or number of seam worked _____

Tonnage disposed of by: 1. Trucks or wagons _____ tons. 2. Railroads _____ tons. 3. Waterways _____ tons

Type of mine: Deep (shaft, slope, or drift) _____ Strip pit _____

DATA ON WAGES AND EMPLOYMENT

Fill in following data for each individual (including members of producer's family) earning pay during month. Do not report names.

EMPLOYEE NUMBER (a)	OCCUPATION (b)	WAGE RATE PER DAY (c)	TOTAL GROSS EARNINGS FOR MONTH (See footnote 1) (d)	NUMBER OF DAYS WORKED (See footnote 2) (e)

Footnote 1. Report the total earnings of the men and not what they drew after deduction for powder, smithing, etc.
Footnote 2. Convert fractional days into equivalent full-time days.

* U. S. GOVERNMENT PRINTING OFFICE: 1934 16—1601

9[illegible]

Form T
NRA Bit. Coal

INFORMATION FOR SMALL MINES

(TO BE REPORTED FOR EACH MINE)

FOLLOW INSTRUCTIONS CAREFULLY FOR EACH ITEM

1. Number of days mine worked during month _____
2. Total tons produced during month _____
3. Number of men working during month _____
4. Average output of mine per working day [(2) divided by (1)] _____

ITEM	TOTAL COST	
	AMOUNT	PER TON
5. TOTAL WAGES PAID DURING MONTH (see instructions)	$	$
6. TOTAL EXPENSES FOR MINE SUPPLIES USED DURING MONTH (see instructions)		
7. OTHER MINE EXPENSE INCURRED DURING MONTH: (See instructions)		
(a) Royalties, paid or accrued		
(b) Taxes		
(c) Compensation insurance, paid or accrued		
(d) Sales expense		
(e) Miscellaneous		
(f) TOTAL OTHER EXPENSES (7a to 7e inclusive)		
8. TOTAL COST (sum of 5, 6, and 7f)	$	$

	TONS	AMOUNT	PER TON	CODE PRICE PER TON
9 INCOME FROM COAL SALES:				
(a) Lump (including forked coal)		$	$	$
(b) Egg				
(c) Nut				
(d) Screenings (slack)				
(e) Run of mine				
(f) TOTAL SALES (9a to 9e inclusive)		$	$	$

10. If members of producer's family work in mine, specify number so employed _____

11. If mine is worked by producers on a share basis, state total income earned by producers this month, $_____

12. Are you selling coal at the code price? _____ (Yes or no)

13. Are you paying wages established under code? _____ (Yes or no)

INSTRUCTIONS

The instruction numbers specified below correspond with above item numbers

5. **Number of men working during month.**—Report only the men who have earnings during the month. Any men who were on the pay roll but who had no earnings should not be included.

5. **Total wages paid during month.**—Under this item report gross wages paid to employees, whether paid by the hour, day, or ton (or on other piecework basis). Do not include the earnings of salaried employees such as clerks, stenographers, bookkeepers, supervisors, etc. (See instructions 7d and 7e)

6. **Total expense for mine supplies used during month.**—Report supplies used and properly chargeable to mine expense during the period, power purchased during month and/or mine fuel used at mine for power. If exact figures are not available, an estimate of these expenses should be reported.

7a **Royalties paid or accrued.**—Report royalties due, accrued, or paid for this month.

7b **Taxes on mine property and equipment.**—Report under this heading all real estate, personal property, and other taxes in lieu thereof levied on mine property and equipment. This should represent the month's share of taxes based on previous year's actual tax bills.

7c **Compensation insurance paid or accrued.**—Report the month's proportion of compensation insurance paid or accrued.

7d **Sales expense.**—Includes such items as salaries and expenses of salesmen, commissions paid or accrued, selling office expense, sales taxes, etc.

7e **Miscellaneous.**—Include here salaries of clerical and supervisory employees, operators' association dues and assessments, code authority expense, insurance other than compensation, depreciation, depletion (use income tax basis for calculation), etc.

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[ANSWER WAGE AND EMPLOYMENT DATA ON REVERSE SIDE]

16—1601

Form A
NRA Bit. Coal

NATIONAL RECOVERY ADMINISTRATION
BITUMINOUS COAL

DO NOT FILL IN
Key Code No. .....
Classification .....

Report for ..... mine.

Name of reporting company .....

Address .....

I CERTIFY that this report has been compiled from the records of this company and is, to the best of my knowledge and belief, true and correct, for period of ....., 193

..... For .....
(Signature) (Official title) (Name of company)

Form A
NRA Bit. Coal

NATIONAL RECOVERY ADMINISTRATION
BITUMINOUS COAL

DO NOT FILL IN
Key Code No. .....
Classification .....

For period ....., 193 , to ....., 193

Location of mine: State ..... County ..... Field .....

Code Authority No. ..... Subdivision code authority letter ..... Name of mining district .....

Name and/or number of seam(s) worked .....

Tonnage disposed of by: 1. Trucks or wagons ..... 2. Railroads ..... 3. Waterways .....

Type of mine. 1. Deep (shaft, slope, or drift) ..... 2. Strip pit .....

Class of mine: 1. Commercial ☐; 2. Part commercial, part captive ☐; 3. All captive ☐;
Captive to: (a) Public utility ☐; (b) Steel and by-product coking plants (other than public utilities) ☐;
(c) Railroad ☐; (d) Industrial ☐; (e) Other (specify) .....

Average output per working day (whether one or more shifts are worked) ..... net tons (total tonnage for period divided by number of days tipple started).

State any special local condition that affects production cost or market value for this period .....

If this form is used to report on unassigned or reserve acreage, note here ..... (Yes or No)

Number days tipple started ..... Tonnage produced in this period .....

Approximate percent coal mined by: Scraper loaders ..... Mobile loading machines .....
Duckbills ..... Hand loading face conveyors .....
Pit-car loaders ..... Hand loading .....

Total average thickness of seam ..... inches; draw slate ..... inches; total partings ..... inches.

INSTRUCTIONS

The instructions numbered 1 to 21 correspond with item numbers on reverse side of this form

This form should be used to report each mine whether working or idle (except abandoned mines). Where a company holds unassigned or reserve acreage that is not attached to a particular mine, all expenses of such acreage should be reported for each subdivisional area separately on either copies of Form A. These forms should be especially marked "Unassigned or reserve acreage" and should show taxes, insurance, and other carrying charges except interest on investment.

1. **Number of days tipple started.**—Report the number of starts made by tipple whether operated longer than or less than 8 hours per day.

2. **Number of working days tipple idle.**—The number of days, other than Sundays and holidays, the tipple was idle.

3 **Number of holidays and Sundays.**—Report under this item the number of Sundays in the month plus holidays recognized by the labor contract, or set aside by proclamation of the President of the United States or Governor of the State.

4. **Total net tons produced.**—Report on a short-ton (2,000 lb.) basis. Figure should represent all coal disposed of plus or minus changes in inventory (unbilled cars, stockpiles, etc.) at beginning and end of month.

5a. **Day men.**—Report all day men except those included under 5b, 5c, and 5d.

5b. **Mining (piece or day workers).**—Report all workers engaged in cutting or loading coal, whether on tonnage or daily or hourly basis.

5c. **Yardage and deadwork.**—Report all yardage paid for narrow work, also all other deficiency work commonly known as deadwork

5d. **Supervisory and clerical.**—Report managers, superintendents, and other responsible administrative mine employees, technical employees, clerks, stenographers, bookkeepers, and other clerical employees on salary.

5e. **Total mine labor.**—Total of 5a, 5b, 5c, and 5d.

6a. **Supplies** (all supplies except power and fuel).—Report supplies used and properly chargeable to mine expense during this period. Supplies used for company house repairs should be reported under 9c.

6b. **Power purchased.**—This should include power purchased from utility companies and others, as well as power produced by central power plant owned by the company and making a prorated charge to the mine for the power it uses.

6c. **Mine fuel.**—Report mine fuel used by individual mine power plants as well as fuel used for heating and drying purposes.

6d. **Total of Items 6a, 6b, and 6c.**

7. **Total mine labor and mine supplies.**—This should include the total of 5e and 6d.

8a. **Salaries and expenses of other employees distributed to this mine.**—This should include pro rata of salary and expenses of division superintendents, general superintendents, division engineers, traveling auditors, mechanical engineers, and proportion of expenses of any central office serving more than one mine, all of which are not included in the totals of 5e. The usual practice of the company should be followed in distributing these charges on either a tonnage or a time-work basis. Include in this account technical expenses contracted for with outside concerns.

General instructions.—Companies having central preparation plants, briquetting plants, and other company-owned units (except central-power plants) serving more than one mine should prorate labor and supply costs to each individual mine and report under items 8a and 8a.

9a. **Taxes on mine property and equipment (except unassigned acreage).**—Report under this caption all real estate, personal property, and other taxes in lieu thereof (ad valorem, etc.) levied on mine property and equipment. This should include the monthly accrued amount based on previous year's actual tax bills.

9b. **Insurance** (all classes except compensation).—Report the monthly proportion of all insurance premiums for fire, tornado, and other classes of insurance but excluding amounts representing compensation insurance.

9c. **Company house expenses (including fixed charges thereon) less income.**—Report all company house expenses for repairs, maintenance, and fixed charges, including taxes, insurance, and depreciation. All income from rentals should be credited to this account so the net amount reported for each mine is the net result from operation of company houses. Report net income in red and deduct from total of other expenses.

9d. **Depreciation (use income-tax basis for calculation).**—Report 1 month's proportion of the depreciation used in reporting the income to the Treasury Department on their Form No. 1120. This is done to get the cost of depreciation on as uniform a basis as possible. If the company is using rates during the year other than those they use for reporting to the Treasury Department, these should not be used in this caption, but substitute the monthly proportion of the amount as calculated for the annual Treasury Department income-tax return.

9e. **Royalties paid or accrued.**—Report royalties due, accrued, or paid for this month on leases of all lands connected with the mine for which this report is made.

9f. **Operators' association dues and assessments.**—Report assessments and dues for this month.

11c. **Compensation insurance paid or accrued.**—Report monthly proportion of compensation insurance paid or accrued. Companies carrying outside insurance will report the monthly proportion which they will have to pay, or have paid, and those carrying their own insurance should report the amount they accrue in actual practice, not to exceed the rate of accrual required for the year 1932.

11d **Code authority expenses.**—Report code authority expenses incurred for this month and if a definite rate per ton has been established by the end of this month accrue the amount based upon this rate of assessment

11e **Depletion.**—Instructions given under 9d will apply to this item.

14 **Total selling expenses.**—Bring forward from Form B the rate per ton for selling expenses as determined on that report. This rate per ton should be multiplied by tonnage produced (item 4) to arrive at the amount to be included on this mine's report. It is quite necessary that this extension be made in this manner in order to work out the cost studies required by NRA under the Coal Code.

15. **Total administrative expenses.**—Instructions for reporting are the same as above in 14.

16. **Total cost per ton.**—Carefully check all totals in the "Amount" columns, as well as the "*per ton*" totals. In arriving at the per ton cost the calculation should be carried *four* places beyond the decimal

17a. **Sales from orders and contracts taken prior to effective date of code prices.**—Cars should be taken to segregate sales of coal contracted or sold prior to this date as it becomes an important item in the study required by NRA. Report only coal loaded on railroad cars, barges, or locomotive tenders.

17b. **Sales from orders taken under code schedule of prices.**—Follow instructions given in 17a above for sales made at prices established under the Code.

17c. **Shipments to storage (rail yards and docks).**—Report (a) bunker coal, (b) coal applicable to existing contracts for coal for dumps (other than railroad cars) for resale by the producer or his agent, all of which has not actually been sold but consigned to the producer or his agent at rail or truck yards, tidewater ports, river ports, or lake ports, and/or at docks beyond such ports.

17d **Coal to beehive ovens and briquetting plants.**—Report coal transferred to these plants and include the amount at which this tonnage was valued. It is the practice used by the company on sales was assigned to this tonnage use the minimum code price for the sizes transferred.

17e **Sales at mines to dealers and retail customers (including house coal).**—Report under this item all tonnage delivered to trucks at the mine regardless of whether the orders were before or after the Code (as set out in 17a and 17b, which is to be used exclusively for truck or barge shipments; also include local retail coal and house coal).

17f. **Net change in inventory for this period (plus or minus).**—Report in red if the inventory at the end of the period is less than the inventory at the first of the period, and in case the tonnage and amount is in red this item should be subtracted from the other items 17a to 17g in reporting line 18.

19. **Average tons produced for period.**—It is desired to know the average daily tonnage produced, and if for any reason the division of item 4 by item 1 does not result in a normal average daily producing figure, note at the bottom of this report what is considered the present-normal working-day tonnage.

20a. **Labor expense for working days.**—In those cases in which daily labor costs are not computed as a part of the normal accounting practice for the mine, the following method for arriving at labor costs for working days is suggested:

Subtract the total of labor costs for idle days and Sundays and holidays (item 20b plus item 20c) from the total labor cost (item 5e).

Care should be taken that earnings of supervisory and clerical employees (item 5d) as well as items 5b, 5c, and 5e are properly allocated under items 20a, 20b, and 20c.

20b. **Labor expense for idle days.**—Summarize total expense for idle days as shown on the pay roll or cost sheets for reporting under this item.

20c. **Labor expense for Sundays and holidays.**—Use same instructions as under 20b in the column headed "Number of Days", insert the number of working days, number of idle days, number of Sundays and holidays, which should equal on line 20d the total days in the month for which this report is made. This "Number of Days" should be divided into the "Total Amount" to give the "Average per Day."

21a, 21b, and 21c.—Instructions under 20a, 20b, and 20c will apply to these items. Where a company does not keep a daily supply cost the total supply cost for the month should be reported. An effort should be made to arrive at the amount of power cost and mine fuel separately for idle days and Sundays and holidays, which amount should be set in as the amounts for 21b and 21c. After arriving at the cost for power and mine fuel on idle days and Sundays, subtract these amounts from total supply expense to arrive at total working-day supply cost. This will assist the smaller mines that do not keep daily cost on supplies and will not disturb to any great extent the studies on supply expense. The companies that keep accurate daily supply expenses should report the supply expenses for working days, idle days, and Sundays and holidays.

U. S. GOVERNMENT PRINTING OFFICE 16—41830

Form A
NRA Bit. Coal

PRODUCTION AND DISTRIBUTION COSTS (For Individual Mines)

For period....., 193 , to....., 193

FOLLOW INSTRUCTIONS CAREFULLY FOR EACH ITEM (See reverse side of this form)

1. Number of days tipple started	
2. Number of working days tipple idle	
3. Number of holidays and Sundays	
4. Total net tons produced	

	TOTAL COST (For month or period)	
	AMOUNT	PER TON
5. MINE LABOR.		
5a. Day men (paid by hour, day, or month)	$	$
5b. Mining (piece- and day-workers)		
5c. Yardage and deadwork		
5d. Mine supervisory and clerical employees		
5e. TOTAL MINE LABOR	$	$
6. MINE SUPPLIES:		
6a. All supplies (except power and fuel)	$	$
6b. Power purchased		
6c. Mine fuel at previous month's cost		
6d. TOTAL MINE SUPPLIES	$	$
7. TOTAL MINE LABOR AND MINE SUPPLIES	$	$
8. OTHER MINE EXPENSES:		
8a. Salaries and expenses of other employees distributed to this mine	$	$
8b. Mine office expense (not included under 5d above or reported on Form B)		
9. CHARGES USUALLY ON A FIXED LUMP-SUM BASIS:		
9a. Taxes on mine property and equipment and other taxes in lieu thereof (except on unassigned acreage)		
9b. Insurance (all classes except compensation)		
9c. Company house expenses—including fixed charges thereon, less income		
9d. Depreciation (use income-tax basis for calculation)		
10. TOTAL OF ITEMS 8 AND 9	$	$
11. CHARGES USUALLY ON A PER TON BASIS:		
11a. Royalties paid or accrued	$	$
11b. Operators' association dues and assessments		
11c. Compensation insurance paid or accrued		
11d. Code authority expense		
11e. Depletion (use income-tax basis for calculation)		
12. TOTAL OF ITEMS UNDER ITEM 11	$	$
13. TOTAL PRODUCING COST (total of items 5 to 12, inclusive)	$	$
14. TOTAL SELLING EXPENSES—PER TON FROM ITEM 54 (applied to tonnage produced from this mine)	$	$
15. TOTAL ADMINISTRATIVE EXPENSES—PER TON FROM ITEM 56 (applied to tonnage produced from this mine)	$	$
16. TOTAL COST PER TON (sum of per ton costs of items 7, 10, 12, 14, and 15)	$	$

	TONS	AMOUNT	PER TON
17. INCOME FROM COAL SALES—FROM THIS MINE:			
17a. Sales from orders and contracts taken prior to effective date of code prices		$	$
17b. Sales from orders taken under code schedule of prices			
17c. Shipments to storage—rail yards and docks (sec. 5, art. 5, Coal Code)			
17d. Coal to beehive ovens and briquetting plants			
17e. Sales at mines to dealers and retail customers—including house coal			
17f. Net change in inventory (coal on hand and in transit to scales) for this period (plus or minus)			
17g. Used at mine for power or heat			
18. TOTAL INCOME FROM COAL SALES (total of 17a to 17g) Tons, same as item 4		$	$

OPERATING DATA

19. AVERAGE DAILY TONS PRODUCED FOR PERIOD (item 4 divided by item 1)

	TOTAL AMOUNT	PER TON	Number of Days	AVERAGE PER DAY
20. ANALYSIS OF TOTAL MINE LABOR (see instructions):				
20a. Labor expense for working days	$	$		$
20b. Labor expense for idle days	$	x x x x		$
20c. Labor expense for Sundays and holidays	$	x x x x		$
20d. TOTAL ALL MINE LABOR (item 5e)	$			x x x x x
21. ANALYSIS OF TOTAL MINE SUPPLIES:				
21a. Supply expense for working days	$	$		$
21b. Supply expense for idle days	$	x x x x		$
21c. Supply expense for Sundays and holidays	$	x x x x		$
21d. TOTAL ALL MINE SUPPLIES (item 6d)	$			x x x x x

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Form B
NRA Bit. Coal

NATIONAL RECOVERY ADMINISTRATION
BITUMINOUS COAL

DO NOT FILL IN
Key Code No. _____
Classification _____

Report for _____ mine.

Name of reporting company _____

Address _____

I CERTIFY that this report has been compiled from the records of this company and is, to the best of my knowledge and belief, true and correct, for month of _____, 193...

_____ _____ For _____ 16—1232
(Signature) (Official title) (Name of company)

Form B
NRA Bit. Coal

NATIONAL RECOVERY ADMINISTRATION
BITUMINOUS COAL

DO NOT FILL IN
Key Code No. _____
Classification _____

SUMMARY OF COSTS FOR EACH OPERATING COMPANY

Covering Operations for all Mines

(MUST BE FURNISHED TO ALL SUBDIVISIONAL CODE AUTHORITIES IN WHICH MINES ARE LOCATED)

	TONS	
50. TOTAL TONS PRODUCED—ALL MINES (sum of item 4) net tons		
51. TOTAL TONS PURCHASED COAL SOLD, AND JOBBED COAL HANDLED		
52. TOTAL TONS HANDLED—THIS PERIOD BY THIS COMPANY		
	AMOUNT	PER TON
53. SELLING COSTS:		
53a. Salaries and expenses—salesmen	$	
53b. Commissions paid or accrued		
53c. Salaries and expenses—selling officers		
53d. Salaries and expenses—clerical		
53e. Rent and office expenses		
53f. Advertising		
53g. Sales taxes		
53h. Depreciation—office equipment and automobiles		
53i. All other selling expenses		
54. TOTAL SELLING EXPENSES (items 53a to 53i). Use tonnage item 52 as divisor	$	$
55. ADMINISTRATIVE EXPENSES:		
55a. Salaries and expenses—officers		
55b. Salaries and expenses—clerical and others		
55c. Office expenses and rent		
55d. Legal		
55e. General		
55f. Depreciation—office equipment		
55g. Corporate taxes		
55h.		
55i. All other administrative expenses		
56. TOTAL ADMINISTRATIVE EXPENSES (items 55a to 55i). Use tonnage item 52 as divisor	$	$
57. TOTAL PRODUCING EXPENSES—ALL MINES (total of items 13). Use tonnage item 50 as divisor	$	$
58. TOTAL COST PER TON—EACH OPERATING COMPANY (sum of per ton items 54, 56, 57)	X X X X X	$

INSTRUCTIONS

The instructions numbered 50 to 58 correspond with the item numbers on Form B, above

General instructions.—This form should be prepared by all companies or firms operating bituminous coal mines. Where a company operates a mine or mines in more than one subdivisional code area, copies of this return will be necessary for each subdivisional code authority. Do not include any amount for interest or other capital charges.

50. Total tons produced—All mines.—Report the total tonnage produced by each company regardless of subdivisional authority boundaries. This will be the sum of items 4 on Form A for all mines of each company.

51. Total tons purchased coal sold.—Report all the purchased coal sold during this month for which the expense of selling and handling is included in items 53 and 55.

52. Total tons handled.—This is the sum of items 50 and 51 and is to be used in arrive at the per-ton cost of selling and administrative expenses.

53a. Salaries and expenses—Salesmen.—Include in this item only the salaries and expenses of salesmen directly connected with sales of coal.

53b. Commissions paid or accrued.—If operating company engages a selling company to sell its coal, the commissions paid, together with any commission paid to a supervisory selling agency, should be reported under this item. This will also include commissions paid to company salesman who are on a commission basis of compensation.

53c. Salaries and expenses—Selling officers.—These should include: The salaries and expenses of the general executive sales officers, general sales agents, sales managers, but not salesmen directly selling coal.

53d. Salaries and expenses—Clerical.—Report only the clerical expense connected with the running and managing of sales offices.

53e. Rent and office expenses.—This should only include rent and office expense directly connected to selling efforts.

53f. Advertising.—This includes advertising expenses, paid or accrued, in connection with the sale of coal or coal produces by each company.

53g. Sales taxes.—Where State sales tax laws provide that they shall be treated as an item of cost, this expense should be reported under this item.

53i. All other selling expenses.—Report all other selling expenses not specifically provided for in item 53a to 53g.

54. Total selling expenses.—Divide total of item 54 by item 52 to arrive at the per-ton cost of selling. The per-ton cost should be carried to four places past the decimal.

55a. Salaries and expenses—Officers.—Report the salaries of all officers of the company, except as provided for in item 53c.

55b. Salaries and expenses—Clerical and others.—Report clerical and other expenses, except as provided for in 53d and 56 of Form A.

55c. Office expenses and rent.—Report all office expenses and rent, except as provided for in 53c.

55d. Legal.—Report all legal expenses, paid or accrued, for the month.

55e. General.—Report under this item expenses of a recurring nature and not specifically classified under 55a, b, c, d, f, and g. This caption should not include sundry administrative expense of a nonrecurring nature, which should be reported under 55i.

55f. Depreciation—Office equipment.—Report depreciation on income-tax basis for all general office and sales office equipment.

55g. Corporate taxes.—Report capital-stock tax and other State corporate taxes, including severance, tonnage, and net-proceeds taxes.

55h. Blank.—Report any special administrative expenses which may have occurred in this month, which should be set out distinctly from other general classifications under this heading.

55i. All other administrative expenses.—Report sundry nonrecurring expenses.

56. Total administrative expenses.—Divide the total of item 55 by the total of item 52 to arrive at the cost per ton, which should be carried in four places past the decimal.

57. Total producing expenses—All mines.—This should be the sum of items 13 on Form A and, when divided by the total from item 50, should represent the total cost per ton for producing coal by each company in this month. The per-ton cost should be carried four places past the decimal.

58. Total cost per ton—Each operating company.—This is to be carried as a total per-ton cost and should be the sum of the per-ton cost of items 54, 56, and 57.

* U. S. GOVERNMENT PRINTING OFFICE 1933 16—1232

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Form C
NRA Bit. Coal

NATIONAL RECOVERY ADMINISTRATION
BITUMINOUS COAL

DO NOT FILL IN
Key Code No. _____
Classification _____

Report for _____ mine.

Name of reporting company _____

Address _____

I CERTIFY that this report has been compiled from the records of this company and is, to the best of my knowledge and belief, true and correct, for period of _____, 193

_____ _____ For _____
(Signature) (Official title) (Name of company)

Form C
NRA Bit. Coal

NATIONAL RECOVERY ADMINISTRATION
BITUMINOUS COAL

DO NOT FILL IN
Key Code No. _____
Classification _____

For period _____, 193 , to _____, 193

Location of mine: State _____ County _____ Field _____
Code Authority No. _____ Subdivision code authority letter _____ Name of mining district _____
Name and/or number of seam(s) worked _____
Tonnage disposed of by: 1. Trucks or wagons _____ 2. Railroads _____ 3. Waterways _____
Type of mine: 1. Deep (shaft, slope, or drift) _____ 2. Strip pit _____
Class of mine: 1. All commercial ☐; 2. Part commercial, part captive ☐; 3. All captive ☐;
Captive—owned or controlled by: (a) Public utility ☐; (b) Steel and by-product coking plants (other than public utilities) ☐;
(c) Railroad ☐; (d) Industrial ☐; (e) Other (specify) _____
Average output per working day (whether one or more shifts are worked) _____ net tons (total tonnage for period divided by number of days tipple started).
State any special local condition that affects production cost or market value for this period _____
_____
If this form is used to report on unassigned or reserve acreage, note here _____ (Yes or No)
Number days tipple started _____ Tonnage produced in this period _____
Approximate percent coal mined by: Scraper loaders _____ % Mobile loading machines _____ %
Duckbills _____ % Hand loading face conveyors _____ %
Pit-car loaders _____ % Hand loading _____ %
Total average thickness of seam _____ inches; draw slate _____ inches; total partings _____ inches.

DATA ON MAN-HOURS OF PIECE WORKERS

If the company maintains at this mine a record of actual hours *spent at the face* by mining, cutting, and loading labor paid on a piece-work basis, report the total man-hours worked by these employees in either column (1) or (2) of following schedule. If the data on man-hours spent at the face *exclude* the time taken out for lunch report in column (1); if the time for lunch is *included* in the total man-hours figures report in column (2).

In those cases in which a company does not keep a record of time *spent at the face* by mining, cutting, and loading employees on a piece-work basis *but does* maintain a record of time *spent in the mine*, report the total man-hours of these employees in column (3). Give in detail under column (4) the method used in collecting the data as reported below. If the statement of method is not complete, the data supplied cannot be used. If data reported are for man-hours spent in mine, the statement of method should specify whether the total man-hours figures were computed on a mine entrance to mine entrance basis, shaft bottom to shaft bottom basis, or some other basis.

OCCUPATION	TOTAL MAN-HOURS SPENT AT FACE		TOTAL MAN-HOURS SPENT IN MINE	METHOD USED IN RECORDING TIME
	EXCLUDING TIME FOR LUNCH PERIODS (1)	INCLUDING TIME FOR LUNCH PERIODS (2)	(3)	(4)
Pick miners				
Machine loaders				
Mechanical loading men				
Cutters and helpers				
Total				

INSTRUCTIONS

General instructions.—The occupations for which data are requested under items 101, 103, 107, and 109 are the ones for which a particular study is desired at this time. The list of occupations (day men) for which data are to be reported on this form has been prepared by your Code Authority in cooperation with the Administration.

The earnings and employment information for employees in unspecified inside day occupations (excluding supervisory, technical, or clerical workers, or tonnage workers paid by the day) should be reported under items (e) and (f), and the data for employees in unspecified outside day occupations (excluding supervisory, technical, or clerical) should be reported under items (o) and (p). In classifying as between unspecified inside skilled and unskilled day men, place all employees *not reported in specified occupations* who receive a rate equal to or higher than the driver or brakeman rate in the "other skilled" classification and all other unspecified employees in the "other unskilled" classification. In the case of outside day men, place all employees *not reported in specified occupations* who receive a rate equal to or higher than dumpers, car droppers, or car repairers in the "other skilled" classification and all other employees not reported in the "other unskilled" classification.

In those instances in which day men are intermittently shifted from one day group to another day group, report these day men to the occupation in which they worked the greater number of days. In the case of pieceworkers who are intermittently shifted to day work, the hours and total earnings of these employees should be reported to their normal tonnage occupation.

Columns 1, 24, and 46—"Number of men earning pay during period."—Report in this column only the men who have earnings during pay period reported. Any men who were on the pay roll but who had no earnings should not be included.

Columns 2 and 47—"Rate per day."—Report the rate per 8-hour day paid the men under the various classifications. If more than one rate is in effect specify the rate paid to the majority of the employees in the occupation.

Columns 3 and 48—"Total man-days worked."—Report in this column for inside and outside day men the actual man-days worked. Convert fractional days into equivalent full-time days.

Columns 4 and 58—"Total man-hours worked."—Report in this column for inside and outside day men the total man-hours actually worked.

Columns 5, 28, and 50—"Total earnings."—The sum of the figures in these columns should equal the total pay roll.

Columns 6 to 11z and 51 to 54z—"Number of men who worked in this pay period."—The information reported in these columns should be carefully compiled and a cross addition should equal the total men on pay roll under each occupational classification.

Columns 12, 13, 14, 55, and 57—"Average working force."—In reporting the working force on a normal working day, idle day, Sunday, or holiday, do not include any men who were employed on special jobs.

Item 105—"Supervisory and clerical."—Under this designation report managers, superintendents, and other responsible administrative mine employees, technical employees, clerks, stenographers, bookkeepers, and other clerical employees on salary.

Column 26—"Total man-starts."—Under "Mining, cutting, and loading labor" (item 107) use the following rule for determining the number of starts for employees on a tonnage basis: When a tonnage worker has been credited with two or more cars on the bulletin for any day it should be considered as a start. To these starts should be added the shifts performed at day labor by these men.

Columns 28 and 50—"Total all earnings, including yardage and deadwork."—In these columns should be reported the total amount of earnings of the miners either on a day or piecework basis, and for the purpose of this study it is desired to have the earnings for yardage and deadwork included in the total earnings. The "yardage and deadwork earnings", however, should be reported separately in columns 27 and 49).

Columns 27 to 44—"Number of men whose earnings in this pay period were."—This should be arrived at from the total earnings of the men and not what they drew after deductions. In other words, gross-earning basis should be used.

Item 107b—"Loaders—machine-cut coal."—In these cases to which machine loaders do intermittent piecework, classify them as machine loaders and report employees who both cut and load coal under the occupation to which they get their greater earnings.

Item 107c—"Mechanical loading men."—Under this designation report all pieceworkers who normally comprise a mechanical loading crew. Do not report these employees elsewhere.

Item 107d—"Cutters' and helpers' rate" (piece-work basis).—In column 28 report the combined basic rates for cutters and cutters' helpers at this mine.

Item 109b—"Mechanical loading men."—Under this designation report all men paid by the day who normally comprise a mechanical loading crew. Do not report these employees elsewhere.

Columns 23 and 57—"Total absenteeism" (day men).—For the pay roll period count each employee absent who, for any reason whatever, failed to report for work when work was available to him, and assign to each employee the number of hours he could have worked had he been present. Report in this column the total man-hours absenteeism for each occupational classification.

Column 45—"Total absenteeism" (pieceworkers).—Count each employee in this group absent who, for any reason whatever, failed to report for work when work was available to him. Consider each absence as a start and report the total of such man-starts for each occupational classification.

Form C

PA * Coal

EMPLOYMENT AND EARNINGS INFORMATION—(For Individual Mines)

For Period _____, 193 , to _____, 193

FOLLOW INSTRUCTIONS CAREFULLY FOR EACH ITEM (See reverse side of this form)

(FOR USE OF CODE AUTHORITY, IF DESIRED)

	OCCUPATION (See instructions)	Number men worked during pay period	Rate per day	Employment: Total man-days worked	Employment: Total man-hours worked	Total earnings	Number of men who worked in this pay period: 20 hours or less	Over 20 to 30 hours	Over 30 to 40 hours	Over 40 to 48 hours	Over 48 to 54 hours	Over 54 to 60 hours	Over 60 hours	Average working time on a normal working day	Basic hourly rate or piece-work basis	Number of men whose earnings in this pay period were: Under $13	$13 to $17.99	$18 to $23.99	$24 to $29.99	$30 to $34.99	$35 to $39.99	$40 to $49.99	$50 to $59.99	$60 to $74.99	$75 to $99.99	$100 and over	Total clock-hours reported in man-hours
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
101	Inside day men:																										
	a.					$																					
	b.																										
	c.																										
	d.																										
	e.																										
	f.																										
	g.																										
	h.																										
	i.																										
	j.																										
	k.																										
	l.																										
	m.																										
	n.																										
	o.																										
	p.																										
	q.																										
	r.																										
	s. Other skilled		X X																								
	t. Other unskilled		X X																								
102	Inside day men—Total		X X			$																					
103	Outside day men:																										
	a.					$																					
	b.																										
	c.																										
	d.																										
	e.																										
	f.																										
	g.																										
	h.																										
	i.																										
	j.																										
	k.																										
	l.																										
	m.																										
	n.																										
	o. Other skilled		X X																								
	p. Other unskilled		X X																								
104	Outside day men—Total		X X			$																					
105	Supervisory and clerical:																										
	a. Underground		X X		X X Y Y	$																					X X X X
	b. Surface, including mine office		X X		X X X X																						X X X X
106	Total, supervisory and clerical		X X		X X X X	$																					X X X X

	OCCUPATION (Teamers and others paid per work day)	Number men worked during pay period	Average days worked per week	Total man-days worked	Tonnage and coal-work earnings	Total all earnings including tonnage and coal-work earnings	Number of men who worked in this pay period: 1 day or less	Over 1 to 2 days	Over 2 to 3 days	Over 3 to 4 days	Over 4 to 5 days	Over 5 to 6 days	Over 6 days	Average working time on a normal working day	Basic tonnage rate or hourly rate	Number of men whose earnings in this pay period were: Under $13	$13 to $17.99	$18 to $23.99	$24 to $29.99	$30 to $34.99	$35 to $39.99	$40 to $49.99	$50 to $59.99	$60 to $74.99	$75 to $99.99	$100 and over	Total clock-hours worked (as reported in man-hours)
		(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(34a)	(35)	(36)	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)
107	Mining, cutting and loading labor (on piece-work basis):																										
	a. Pick miners					$																					
	b. Loaders—machine-cut coal																										
	c. Mechanical loading men (or helpers)																										
	d. Cutters and helpers																										
108	e.																										
	Total mining, cutting, and loading labor		X X			$																					

	OCCUPATION (On daily or hourly basis)	Number men worked during period	Rate per day	Total man-days worked	Tonnage and coal-work earnings	Total all earnings including tonnage and coal-work earnings	Number of men who worked in this pay period: 20 hours or less	Over 20 to 30 hours	Over 30 to 40 hours	Over 40 to 48 hours	Over 48 to 54 hours	Over 54 to 60 hours	Over 60 hours	Average working time on a normal working day	Total man-hours worked	Number of men whose earnings in this pay period were: Under $13	$13 to $17.99	$18 to $23.99	$24 to $29.99	$30 to $34.99	$35 to $39.99	$40 to $49.99	$50 to $59.99	$60 to $74.99	$75 to $99.99	$100 and over	Total clock-hours worked (as reported in man-hours)
		(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)	(62)	(63)	(64)	(65)	(66)	(67)	(68)	(69)	(70)	(71)	(72)	(73)	(74)
109	Cutting and loading labor (on day rate):																										
	a. Loaders—pick and machine					$																					
	b. Mechanical loading men (or helpers)																										
	c. Cutters																										
	d. Cutters' helpers																										
110	e.																										
	Total cutting and loading labor		X X			$																					
111	Total (Items 102, 104, 106, 108, 110)		X X	X X X	X X X	X X																					

16—1241

sidered as a start. To these starts should be added the shifts performed at day labor by these men."

This basis for man-starts was not entirely sitisfactory, in part because of the difference in the size of mine-cars in use among the many mines, ranging all the way from slightly under a ton up to 4 tons. No figure of average capacity of mine cars was available, though reporting over a period could have developed such a figure, which could have been applied to the man-start measurement so as to bring about substantial uniformity.

A struggle ensued to reconcile the different viewpoints and produce a man-start basis acceptable to the industry, so that the reporting of Form C data could continue through a period of months sufficient to establish sound relationships.

On July 5, 1934, Dr. Willard E. Hotchkiss was appointed to direct a special study of wage differentials existing among the various bituminous coal fields. Dr. Hotchkiss rendered a report as of November 30, 1934, which clearly set forth the history of the attempt to adjust Form C to meet the divergent attitudes toward the man-start basis; the following is quoted from his report:

"During the time immediately following my appointment a review was made of previous studies of wage rates and differentials. Later on efforts to assist in removing obstacles in the way of carrying out the current statistical program have given frequent occasion to consider existing differentials; but in the absence of comparable operating figures under existing wage scales it has not been possible to proceed with the study which I was scheduled to direct.

"Those who hoped for direct benefits from the study were naturally disappointed that no study was made. But even if a study had established a theoretical case for adjustments on October first, it is doubtful to what extent it would have been possible to make such adjustments; revising an unexpired wage agreement presents serious difficulties.

"Viewing the bituminous Code in the large, the harm resulting from failure to secure facts upon which to base a study of differentials consists chiefly in delaying the time when improved procedure in meeting issues, whether by negotiations or otherwise, can become effective. While some of the Code Authorities have collected operating data for their particular subdivisions, these are without official sanction, and doubtless it is now too late to secure data from the whole industry on any approved schedule so as to permit checking and comparison between fields in time to be available for the forthcoming negotiations. From the standpoint of the interest which N.R.A. obviously has in the Bituminous Code, lack of official statistics to guide these negotiations is unfortunate.

"Failure to adopt a schedule for securing current operating statistic was brought about by disagreement between operators and was confined to Schedule C (Earnings) and specifically to the definition of man-start within that schedule.

"Since the number of hours worked by piece workers is not universally recorded, it is impossible to secure accurate figures of hourly earnings of piece workers throughout the industry. Lacking a record of the hours worked, the nearest practicable approach to accuracy has been sought by dividing the total piece work earnings for each mine and class of piece workers into the total number of starts made by the workers in question. Literally, a man-start is a case in which a man begins work on any day, irrespective of the number of hours he actually works."

The Bituminous Coal Section suggested a basis of 3 tons of coal or one car of coal on the tipple sheet. "This definition was seriously challenged by some of the operators on the ground that mixing cars and tons introduced an incongrous element into the statistics and also on the ground that cars were of different sizes in different mines and fields," says the report, which proceeds:

"Controversy over the definition of a man-start was confined in the main to the Eastern fields which constitute Division Number One under the Bituminous Code. This Code has no national code authority, but operates through divisional and sub-divisional code authorities. Division Number One, comprising the important fields of Ohio, Pennsylvania and West Virginia, and also the other Eastern Fields to the south of Ohio and Pennsylvania, has by far the largest tonnage of all the divisions, and is itself divided into several subdivisions with subdivisional code authorities. Issues which extend beyond the jurisdiction of the subdivisional code authorities in Division Number One have been dealt with in an organization known as the North-South Commission, made up of operators and representatives of the United Mine Workers.

"At the time the issues concerning Schedule C developed, the Fairmont and Smokeless fields had withdrawn from the North-South Commission and were therefore not represented in the deliberations of that body. At a meeting of the North-South Commission held in Washington in the middle of July, prolonged discussion was given to Schedule C and unanimous decision was made to eliminate the one-car item from the definition of a man-start, leaving the definition merely as three tons on the tipple sheet.

"During this meeting, in which Mr. Berquist and I participated, Mr. Berquist made it very clear that the definition was likely to meet with opposition on the part of the Fairmont and Smokeless fields. Not only did this

prove to be the case, but certain members of the North-South Commission who were at the meeting and voted for the definition later found that it was not acceptable to the operators of their districts.

"In an effort to compose differences, Mr. Berquist suggested that the column in the schedule showing man-starts under the three-ton definition be paralleled by a column showing man-starts on a so-called 'man-at-work' basis. Such a column would have shown for each mine and type of work the number of cases in which a man actually went into the mine and worked on any day, regardless of the length of time he worked. To provide for checking, it was proposed that each mine should post a list of all its piece workers upon a sheet on which there would be a square for each working day, in which to check off each man who should go into the mine and work on the day in question. By posting this list in a conspicuous place where workers and representatives of the union could inspect it and suggest necessary corrections, it was hoped that substantial accuracy might be attained. However, operators quite generally rejected the proposal on the ground that the procedure would be unfamiliar, that the necessary provisions for checking would have to be improvised rather hurriedly, and that results would be highly unsatisfactory.

"At this stage of the proceedings representatives of all the subdivisions in Division Number One were called to meet at Washington with the hope that they would either reach an agreement or receive an order from the Administrator to proceed in accordance with a schedule which he might designate as the one to be used. The meeting did not have this result, but it was possible during the discussion to bring about an agreement on the part of those fields that had objected to the three-ton definition to accept that definition, provided it was paralleled in the schedule by columns showing (1) the number of starts and corresponding earnings eliminated under the three-ton definition, and (2) the number of one-car starts.

"In a conference which Messrs. Berquist, Ellis and Hotchkiss held with representatives of the operators in Central and Western Pennsylvania and Ohio on August 22, 1934, the solution of the man-start problem, just mentioned, was acknowledged to be statistically sound, but the possibility that previous commitments might prevent the data from being used impartially as between the several fields was given as a reason for declining to proceed on the basis indicated.

"I took the position at that time, which I still hold, that no agent of the Government could have intentionally promised to make adjustments following statistical studies, except such as the findings indicated to be fair and just between all interested parties. As for the future, the

force which authenticated statistical data may have upon adjustments between fields will rest upon the merits of the case, as shown by the facts when they become available.

"Any one familiar with the setting in which this issue of a man-start developed could scarcely believe that a simple statistical item of this sort, even with the ghost of a vague commitment in the background, would hold up the program of a whole industry and an important arm of the United States Government. Historically, the question may perhaps be dismissed with the statement that it was doubtless an item in the 'horse trading' frequently incident to important negotiations. In case N.R.A. had decided upon a schedule that was statistically defensible and embodied it in an order to the industry it seems probable that the special study and the regular work of the bituminous coal unit would have gone ahead as aplanned.

"Looking ahead it is unthinkable that an industry confronted with the hazards that surround bituminous coal mining will continue to throw over a constructive program of fact finding because of a single item on one schedule, even were the issue as contentious as the extraordinary proceedings of the past summer have made the definition of a man-start appear. The questions which the industry and the Recovery Administration have to face in respect to research must certainly be answered on thie merits. If the results of research are to be used as a guide for industrial policy and the settlement of contentious issues in this industry, it is highly essential that prompt means be found for advancing a suitable research program.

"Considering the fact that coal is an exhaustible natural resource concerning which there was a strong urge for a definite national policy long before N.R.A., it appears reasonable to suppose that the Bituminous Code will be near the top of the list of those likely to be continued beyond June 15, 1935. It also appears improbable that current misgivings about price fixing and regulation of production will lead to any sudden abandonment of governmental efforts to cooperate with members of the industry- employers and workers -- to safeguard the approaches to stability which the Code has developed.

"Although the necessity of a national policy in respect to coal is almost universally recognized, there is available no adequate body of information upon which to base more than the general outlines of such a policy.

"The tentative character of the suggestions made by members of the industry in recent conferences indicates that they are by no means in agreement concerning the lines along which future policy should be drawn. The subject is one to which a great deal of study will need to be given, and facts that have already come to light

in the analysis of data collected last year show conclusively that the Government on its part can scarcely commit itself for any considerable period, in respect at least to price and production control, except on the basis of reasonably complete and continuous statistical information.

"The fact that the industry is almost completely unionized makes it especially important that the Government should be at all times in the possession of data to justify any policy it may underwrite in which the consumers of coal have any significant interest. Obviously, there are few policies connected with any program of stabilization in which consumers are not interested.

"With the Government facing problems of the magnitude and importance of those here under discussion; it is unfortunate that the statistical work upon which the whole program was intended to rest, should have been interrupted during the crucial six months period just ended. The members of the industry who have expressed solicitude for continuing the bituminous Code have greater direct interests in the statistical program than any other group. They are in general as intelligent a group of leaders as will be found in any of the industries with which the Recovery Administration has maintained contacts during the past year and a half. It is very doubtful whether any responsible leaders in the industry will expect the Government to continue present policies or embark upon new policies which involve the underwriting of price structures and distribution quotas without resting action upon the most complete statistical information.

"These leaders should be equally ready to recognize that information concerning the earnings of workers is absolutely indispensable as a basis for any program of stabilization. This is especially the case because of the high percentage of total value of product represented by the cost of labor. Also it is important because of the wide geographical distribution of the industry and the consequent importance of adjusting wage differentials, if any, so that employment and earnings, as well as profitable operation will be distributed in some fair way between the different local groups who are entitled to share the opportunities that this industry affords.

"From all these points of view, it would appear that one of the first questions to be raised in any conference with operators looking toward the continuance of the Bituminous Code should be the question of proceeding at the earliest possible date with the work of collecting authentic current statistics.

"Obviously, it is pertinent to the drafting of any new policy to go over the whole statistical program, item by item,

to determine whether there are any points at which it can be simplified and made less expensive. Any such scrutiny, however, should proceed entirely on the merits of the items scrutinized in relation to the whole program and without reference to the question whether one item or another would reveal facts favorable or unfavorable to particular areas in connection with negotiations or administrative decisions. There can be no sound argument against basing policy and administration upon the best possible basis of factual information."

Form D - Analysis of Income from All Coal Sales: The price-fixing provisions of the N.R.A. Code for Bituminous Coal suggested naturally a means for checking realization from sales against average costs as reflected by Forms A and B. Form D was to furnish this means. The tons shipped during each month, to each different price zone, of each different size and preparation of coal was reported separately, with separate columns for the tonnage shipped against contracts made prior to the Code, tonnage shipped against orders received after the Code became effective, and the average realization from all. In order to balance the report against total tonnage produced during the month, items for inventory tons and valuation were also provided, with the same separation between that part reserved against pre-Code contracts and that available for application on Code-price business.

By projecting all the tonnage shipped to a Code-price basis, the influence of the pre-Code contract shipments could be ascertained.

This report form quickly became inadequate as the items multiplied on the Code-price lists. Especially did the early adoption of "market areas"by some of the important subdivisional code authorities, with a schedule of prices on the same coals set at different levels for the different markets, necessitate the addition of many items beyond the line capacity of this already very detailed form. This market-area idea spread rapidly and after the November and December 1933 reports had been made the industry representatives voted their disapproval of continuing Form D.

Such detailed reporting by items, under the exceedingly complicated price-list structure that grew until the January 1935 Code price list of the Division I subdivisions listed some 28,000 price items, is admittedly very burdensome. Nevertheless it is highly desirable that the industry and government know corrently during any price-fixing period the details of all shipments and prices.

Form D was discontinued after December 1933. Its possibilities were perhaps not fairly examined. Obviously any regulated price fixing under Governmental auspices must be surrounded with every precaution against abuse. Besides serving as a check on violations or subterfuge as to price, however, the form offered other vitally important analytical data, such as:

(1) Breakdown of total tonnage by sizes.

(2) Breakdown of shipments by market zones.

Both of these types of data are vital to a sound estimate of the average return per ton on all coal when it is by law or regulation required to be related to or approximate a definite standard, such as cost.

(3) Prompt reflexion of shifts in demand for respective sizes and types of preparations; within a market zone or among such zones,

Form D
NRA Bit. Coal

NATIONAL RECOVERY ADMINISTRATION
BITUMINOUS COAL

DO NOT FILL IN
Key Code No. ..
Classification ..

Report for ..... mine.

Name of reporting company .....

Address .....

I CERTIFY that this report has been compiled from the records of this company and is, to the best of my knowledge and belief, true and correct, for the period of ..... , 193

..... (Signature) ..... (Official title) For ..... (Name of operator)

Form D
NRA Bit. Coal

NATIONAL RECOVERY ADMINISTRATION
BITUMINOUS COAL

DO NOT FILL IN
Key Code No. ..
Classification ..

For period ..... , 193 , to 193

Location of mine: State ..... County ..... Field .....

Code Authority No. ..... Subdivision code authority letter ..... Name of mining district .....

Name and/or number of seam(s) worked .....

Tonnage disposed of by: 1. Trucks or wagons ..... 2. Railroads ..... 3. Waterways .....

Type of mine: 1. Deep (shaft, slope, or drift) ..... 2. Strip pit .....

Class of mine: 1. All commercial ☐; 2. Part commercial, part captive ☐; 3. All captive ☐;

Captive—owned or controlled by: (a) Public utility ☐, (b) Steel and by-product coking plants (other than public utilities) ☐;
(c) Railroad ☐; (d) Industrial ☐; (e) Other (specify) .....

Average output per working day (whether one or more shifts are worked) ..... net tons (total tonnage for period divided by number of days tipple started).

State any special local condition that affects production cost or market value for this period .....

.....

If this form is used to report on unassigned or reserve acreage, note here .....

Number days tipple started ..... Tonnage produced in this period .....

Approximate percent coal mined by: Scraper loaders ..... % Mobile loading machines ..... %
Duckbills ..... % Hand loading face conveyors ..... %
Pit-car loaders ..... % Hand loading ..... %

Total average thickness of seam ..... inches, of slate ..... inches; total partings ..... inches.

GENERAL INSTRUCTIONS

The purpose of this form is to provide the Code Authority and the Administrator with information to show whether the minimum prices authorized have been realized for the sizes shipped during the period, also as a guide for the Code Authority in arriving at fair prices used for the Administrator in approving these prices. The form shows the realization for that portion of the coal invoiced and shipped during the month which applied on orders and contracts taken before the effective date of the code prices; and that invoiced and shipped subsequent to effective date of approved code prices during the month. By tallying the tonnage of each of the sizes sold and multiplying each by the minimum code price in effect during the month, the theoretical return from the sales of coal (had all sales been made at code prices) may be determined. Comparison of the actual sales realization with the production cost as compiled from Form A will indicate whether the prices approved under the code are adequate to cover the cost of production, and to allow a margin for capital charges and return on investment.

In reporting the tonnage of each size sold, specify (a) the tonnage and the actual and average realization paid for that portion of the coal invoiced and shipped during the month which applied on orders and contracts taken before the effective date of the code prices, and (b) the tonnage and the prices for that portion of coal invoiced and shipped during the month which applied on orders and contracts entered into since the effective date of the code prices. In those special cases in which the approved prices for a given size vary in accordance with nature of use (domestic, steam, by-product, gas, etc.), or in accordance with geographical zones, the tonnages sold at these special prices should be clearly indicated and the extensions made at the approved special prices. If sufficient spaces are not provided on the form, attach schedules showing the complete details required on the form. (If convenient, obtain necessary additional forms from your Code Authority.) For shipments on orders taken and contracts made at various price levels under commitments prior to the effective date of the code prices, it will meet the Administrator's needs if the total realization and the average realization for the tonnages so shipped are reported by sizes *for each use class or zone* as specified in column 2.

The following specimen illustrates the method of filling in Form D. The distribution for lump coal shows the application of the coal to different classes of use for which different prices are provided in accordance with the approved price lists; the egg and stove sizes are shown as marketed in different geographical zones for which different code prices are established in some of the approved price lists. The prices given in the specimen are purely hypothetical. They are indicated only to serve as a guide, illustrating the method to be followed in preparing Form D.

(1) SIZE (Designate by inches)	(2) Price basis (or use class) [Classify sizes of each size according to price zones (or consumer classes) established in code price lists.] See instructions	(3) Shipments—Net tons	(4) Percent of each size contained to total of screened sizes (item 100)	Actual Gross Realization During Depicting Commissions						Total actual realizations (6)+(9)			(13) Minimum price for specified zone (or use) under Code in effect that period (See note)	(14) Estimated realizations had all coal to specified basis (or uses) been sold at minimum Code price (3) X (13)
				Shipments on orders taken and contracts made prior to effective date of Code prices			Shipments on orders taken and contracts made subsequent to effective date of Code in behalf of prices							
				(6) Net tons	(7) Amount	Per ton	(8) Net tons	(9) Amount	(10) Per ton	(11) Amount		(12) Per ton	Per ton	Amount
A. LUMP,														
5"		5000	5	1000	2000	2.00	4000	10400	2.60	12400		2.48	2.60	13000
4"		3000	3				3000	7200	2.40	7200		2.40	2.40	7200
1½"	Steam	3000	3	1500	2625	1.75	1500	3150	2.10	5775		1.93	2.10	6300
1½"	Retort & Water Gas	4000	4	2000	3700	1.85	2000	4500	2.25	8200		2.05	2.25	9000
(etc.)														
B. EGG OR STOVE,			20											
4"X2"	Home Market Zone	10000	10	6000	10500	1.75	4000	9600	2.40	20100		2.11	2.40	24000
4"X2"	2nd " "	7000	7	4000	6700	1.68	3000	6300	2.10	12500		1.79	2.10	14700
4"X2"	3rd " "	3000	3	1500	2175	1.45	1500	2925	1.95	5100		1.70	1.95	6850
(etc.)														
C. NUT OR RANGE,			30											
2"X1½"	Home Market Zone	25000	25	9000	13050	1.45	16000	32000	2.00	45050		1.80	2.00	50000
2"X1½"	2nd " "	5000	5	2000	2600	1.30	3000	5400	1.80	8000		1.60	1.80	9000
(etc.)														
D. SCREENINGS (slack),			35											
1"X0		35000	35	23000	13800	.60	12000	12000	1.00	25800		.74	1.00	35000
(etc.)														
E. TOTAL ALL SCREENED COAL AND SLACK (= total of above sizes).		100,000	100	50000	56650	XXX	50000	93475	XXX	150,125		1.50	1.74	174050

DETAILED INSTRUCTIONS

Column 1.—Report sizes shipped. Designate by inches and list larger dimension first.

Column 2.—When more than one price for the same size has been approved by the Administrator, either because of the nature of the business on which sold or the geographical zone into which shipped, specify these classes of business in column 2.

Column 3.—Report total net tons shipped during the month (pre-code and post-code sales combined).

Column 4.—The purpose of this column is to show the percentage of each size obtained by screening. The divisor is therefore the total production of screened sizes plus screenings, excluding straight mine run sold as such.

Columns 5, 6, 7, 8, 9, and 10.—Note that the data requested in these columns are to be classified as between shipments under commitments made prior to, and those arranged subsequent to, established code schedule of prices. In columns 5, 6, and 7 report for each of the sizes as classified in column 2, the total actual realization *before deducting commissions*, the actual average realization per ton, and the actual net tonnage of all coal shipped under commitments made prior to the effective date of code prices. In columns 8, 9, and 10 give the similar data for all coal shipped under commitments made subsequent to the code schedule of prices.

Columns 11 and 14.—In column 11 show actual realization and in column 14 estimated realization, *before deducting commissions*, for all coal shipped, pre-code and post-code sales combined.

Column 13.—The prices reported in this column should be those approved by the Administrator for each of the sizes and classes of sizes specified in column 2. The prices should be reported for each size or classification of size shipped during the month.

If sufficient space is not available on this form, attach additional schedules giving the desired information.

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Form D
NRA Bit. Coal

ANALYSIS OF INCOME FROM ALL COAL SALES

INDIVIDUAL MINE REPORT

Include railroad, river, and truck shipments, transfer to company plants manufacturing products of coal, local sales and mine fuel—Exclude purchased coal

For period ....., 193 , to ....., 193

FOLLOW INSTRUCTIONS CAREFULLY FOR EACH ITEM (See reverse side of this form)

(1) SIZE (Designate by inches)	(2) Price zone (or one class) [Classify sales of each size according to price zones (or a counter classes established in code price lists)] See instructions	(3) Shipments—Net tons	(4) Percent of each size compared to total of screened sizes (see instructions)	Actual Gross Realization Before Deducting Commissions: Shipments on orders taken and contracts made prior to effective date of Code prices (5) Net tons	(6) Amount	(7) Per ton	Shipments on orders taken and contracts made subsequent to effective date of Code schedule of prices (8) Net tons	(9) Amount	(10) Per ton	Total actual realization (5)+(9) (11) Amount	(12) Per ton	(13) Minimum price for specified zone (or use) under Code in effect this period (See note) Per ton	(14) Estimated realization had all coal to specified zone (or use) been sold at minimum Code price (9)×(13) Amount
A Lump,													
B Egg or Stove,													
C. Nut or Range,													
D Screening (slack),													
E. Rescreened Sizes, Dry,													
F Special Treated Sizes (specify method of treatment as well as size),													
G Modified Mine Run,													
H. Total All Screened Coal and Slack (or total all above sizes),													
J. Straight Mine Run,													
K Total Invoiced,													
L. Add Inventory at End of Period (sizes),													
M Total Inventory End of Period,													
N Total (K plus M),													
O. Less Inventory at Beginning of Period (sizes),													
P Total Inventory at Beginning of Period,													
Q. Net Production this Period (N minus P),													

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An adaptation of this form in such manner as to group items and minimize the detail could and should, it is believed, be a regular requirement. It fills or can be revised to fill a very noticeable lack in available bituminous coal data. Assuming a continued interest in if not actual regulation of bituminous coal mining, one of the outstanding gaps in current data has been that of distribution details. It is suggested that the following data should be currently provided to the proper governmental agency by all bituminous coal mines:

(1) Tons shipped, by sizes, by market areas, and by special use classes which represent customary price classifications.

(2) Total realization in dollars received for each such separate item, inclusive of commissions to selling agents and/or wholesalers;

(3) Showing of commissions allowed each selling agent, wholesaler, etc., listing tons shipped on each commission basis.

(4) Breakdown of shipments between "contract" and "spot", with realization on each.

A. System of Handling Reports: The 24 headquarter offices of Subdivisional Code Authorities functioned as field statistical units at the outset. Later, by Code Amendment 4, approved November 5, 1934, each Code Authority was directed to set up a statistical bureau, under a manager, to receive and summarize the monthly reports.

All reporting forms were submitted to the various Code Authorities and others for criticism and suggestions. The forms were then printed and distributed in quantity to each Subdivisional Code Authority, for distribution in quadruplicate to each known mining operation in their respective territories. One of the 4 copies was for the mine to use as a worksheet, one was to be retained by the reporting mine in its submitted form, and two to be filed with the Code Authority. The Code Authority was to retain one copy and forward a complete set of all reports to the Bituminous Coal Section of Research and Planning, N.R.A.

Mine identification on all forms and tabulations therefrom was by a code number, the key to which was held confidential without exception so far as the Bituminous Coal Section of N.R.A. was concerned. Positive identification by name and address was provided on each form by a perforated tab which was detached by the Code Authority before mailing to N.R.A.

Accompanying the set of mine reports for each reporting period the Code Authority submitted a columnar listing of the data (on standard tabular forms called "plates") item by item and mine by mine, with totals and averages for each subarea within the subdivision.

The editing and statistical staff of the Bituminous Coal Section verified all computations on these plates, edited the detailed items and entries for mistakes, eliminated obvious distortions and recapitulated the

subarea totals by Subdivisions and Divisions, from which recapitulation summaries were prepared for publication.

Uniformity of statistical treatment in the Code Authority offices was insured by circularized bulletin service, augmented by several regional meetings called and attended by F. E. Berquist, who explained every step and, by question and answer method, unified the understanding of statistical bureau heads.

B. Editing, Recapitulation and Summarizing:

A trained staff was established in the Bituminous Coal Section, under the immediate direction of qualified project supervisors: Production and Distribution data (Forms and B) under Lewis F. Bond; Employment and Earning data (Form C) under Waldo E. Fisher; and Sales Realization data under Ellery B. Gordon.

The work naturally divided itself into editing, tabulation, recapitulating, and summarizing. Competent assistants under the project supervisors were responsible for the orderly, accurate, and speedy handling of the flow of work: Production and Distribution costs, Mrs. Eva A. Pugh; Employment and Earnings data, Miss Charlotte Garner and Mrs. Hazel Davies; Sales Realization data, Carl Gnam. Every posting, every computation, every correction was checked for accuracy before passing on to the next step.

C. Editing the Individual Mine Figures

1. Atypical Operations Excluded from final Summaries:

Distorting elements were carefully avoided. It was necessary to edit the individual mine figures very carefully, under detailed instructions furnished the editorial staffs for their guidance with respect to each of the reporting forms. The bases for exclusion from summaries were generally as follows, with special cases decided by the supervisor in charge:

(a) Captive mines (those owned by and producing for consumers of coal, such as a steel plant, public utility, or larger manufacturer). It is obvious that some normal factors in costs may be either altogether eliminated (such as selling expense) or be on a basis that destroys their strict comparability with commercial operations (such as the administrative expense). Such mines as reported part of their production "captive" and part commercial were included if as much as 40 per cent of output was sold commercially, unless the costs themselves were such as to materially distort the averages. It should be noted that many of the most important captive operations made no reports on Form A, but, under a special agreement, reported their respective coal operations individually by companies. The reports so made were generally not on conventional Form A and would not have been usable in the summaries; they also were often submitted as consolidated reports for all the mines operated by the same consuming interest without segregation as between Code districts or Subdivisions.

(b) Small mines reporting an average output less than 150 tons a day for the days operated during the month, were excluded. Many such mines submitted very unsatisfactory reports, incomplete and ob-

viously made up from inadequate records. A few exceptions were made in cases where, by including a small mine whose report was otherwise usable, a group of 3 mines could be completed and thus avoid disclosing the identity of particular mines.

(c) Disclosures avoided: In order to avoid disclosure of individual mine figures, in no case were figures published for a group of less than 3 mines.

(d) Insufficient Data: Reports incomplete as to essential items or lacking in a whole group of items (for example, on Form A, items 5d - Mine Supervisory and Clerical; 6a - All Supplies except power and heat; 8a and 8b - Mine office rent and salaries; 9d - Depriciation; 11a and 11e - Royalties and Depletion; 14 - Selling; 15 - Administration) were excluded from summaries. The absence of any one of these items was not necessarily decisive; if comparison of all items indicated that one or more of those missing was probably included in another item, and the tonnage influence of the mine on the average of the group was not distorting, the report was tabulated. Example, on Form C, mines were eliminated which did not report data for all the major occupational groupings of 102, 104, 108 or 110. When dealing with individual mine reports schedules had to be eliminated if essential information such as man-days and man-hours and distribution had been omitted. Similar practice was followed in editing all the Forms.

(e) Distorting Factors: When a mine reported on Form A such extremely high costs or extremely low costs, as obviously to represent a definitely distorting influence in the averages for the group, it was excluded. For example, if a producing cost of $8.00 or $10.00 per ton appeared in a group which ranged from $1.25 to $3.00 per ton for varying numbers of tipple starts, such mine was excluded from the summary. A truck mine (or one which reported shipping by truck more than 50 per cent of its production) was excluded if its realization from sales appeared to include cost of trucking as well as the cost of production, since the average realization shown on summaries represents f.o.b. mine sales. Similar practice was followed in editing Form C.

(f) Strip mines were excluded from the tabulations for deep mines, but were included in Special Strip Mine Summaries when a sufficient number reported to make it possible without disclosure of individual figures(3 or more mines). Beginning with the Summaries for April, 1934, through January, 1935, deep and strip mines were combined in the summaries released covering the Illinois and Indiana Subdivisions.

2. Editing Forms A and B: Immediately after the receipt from the Subdivisional Code Authority office and "check-in" of a month's mine schedules or tabulations on plates, they were examined for "eliminations". The basis for eliminating or excluding certain mines from tabulations was as above described. The remaining mine figures on Form A were then edited by checking the Selling and Administrative Expense costs per ton against those shown on Form B for the same mine.

In editing Form A, the total costs reported for selling and for administration were reconciled with the corresponding Form B items;

thus, the total amount shown for selling expense on Form B for a company operating 3 mines must represent the total of these items as shown on the 3 mine reports. Ordinarily, the Form B selling expense per ton was found to have been applied to the tonnage produced by each of the 3 mines to arrive at the mine's selling expense; in some cases, where Form B indicated a sale of coal purchased, in addition to that produced in the 3 mines, the Form B expense per ton was applied to each mine's report on the tonnage produced. In such cases, of course, the total selling expense of the 3 mines would be less than Form B, Item 5+, by the amount of expense incurred in selling the "purchased" coal at the same per ton cost. Some exceptions occurred, where the accounting system of the reporting company made a fine distribution of the actual amount of costs incurred in selling purchased coal. Sometimes also the actual amount of costs for selling the output of one mine appeared at a different rate from that allocated to another mine operated by the same company. In such cases, the total of the amounts of selling costs shown on the individual Form A mine reports was checked as correct if it equaled the Form B item for total selling cost.

The next editing step involved a mine-for-mine comparison of costs per ton with those of the preceding month, to detect unusual costs and account for them. The following items were especially scrutinized:

* 5d - Mine Supervisory	10 - Total Fixed Charges
5e - Total Mine Labor	11a - Royalties
6d - Total Mine Supplies	11e - Depletion
* 9a - Taxes	14 - Selling Expenses
* 9d - Depreciation	* 15 - Administrative Expense

* These might reasonably run about the same from month to month as to amount, differing in cost per ton dependent on the tons produced.

Checking for Inconsistencies: Other normal agreements and relationships among items were carefully verified as were subtotal postings, computations and totals.

In some cases serious inconsistencies could be accounted for by correspondence; a very few were found which proved to be atypical with distorting influence on the group totals and averages, and these mines were excluded from tabulation. Notes were made of any marked changes in the average per ton of any important item; each book or volume of published summaries contains pages of such explanatory notes.

The last step in editing a month's material for one Subdivision was to submit to the chief editor all

1. Plates (itemized by mines, in tabular form).

2. Mine reports.

3. List of mine reports excluded, with reasons in each case. As to those excluded on account of essential data missing, schedule of item or items missing in each case.

e. Special notes explaining unusual divergence from previous month's figures.

This edited material was examined by the chief editor, and on being found in order, proceeded through the stages of recapitulation by "areas" and Subdivisions, from which the final Summaries by Subdivisions and Divisions were posted, verified, lettered in final form, reverified, and sent to the Government Printing Office for printing and binding preliminary to public release.

Editing Form C: Upon receipt of the individual mine reports or tabulated plates they were examined, item by item, for those schedules which had to be eliminated. (See previous discussion for eliminations.) The following checks were then made:

1. All items under each occupational grouping (102, 104, 106, 108 and 110) were checked for arithmetic accuracy and totaled to get item 111. The number of men reported in the two frequency distributions of hours and/or starts and earnings were checked to the men earning pay during the period.

2. The next step consisted of various checks to determine the internal consistency of items reported -

a. For each occupation total man-hours were divided by total man-days to find the hours worked per day.

b. For each occupation, total earnings were divided by man-days or man-starts and this figure of average earnings per day or start was checked, against the hours worked (in the case of day men) and the rate per day or start reported on the schedule.

c. The distribution of men in the frequency tables under hours and earnings were also checked for consistency in relation to the total man-hours and total earnings reported.

The last steps in editing were similar to those described under Editing Forms A and B.

4. Editing Form D consisted of examination for incompleteness and for eliminations of mine reports made on an improper basis or operating as distortions in the averages. Eliminations followed generally the lines of those enumerated in prior treatment of "Editing Forms A and B", with application to the realization per ton in place of cost per ton.

D. The summaries were published in four volumes, released as completed. November 1933 data were first completed and released to be available to the wage conference of January - March 1934. This volume included more detail, especially as to the labor data, or Form C summaries, than the volume prepared for general distribution and released October 16, 1934, which contained the November and December 1933 Statistics. After December 1933, Forms C and D were discontinued and data

was available on Forms A and B only; succeeding releases included therefore the cost and realization data from these forms only. The monthly January-February-March 1934 cost summaries were released on October 30, 1934. Although on January 9, 1935, a volume was published releasing the monthly cost summaries for April-May-June 1934, these data were later made much more representative by the inclusion of more nine reports, and this volume should not be used, since revisions appear in the final volume covering April, 1934, through January, 1935, released in May, 1935. This 10-month volume was prepared in record time (about five weeks) in the spring of 1935, particularly to make the data available to the wage conference which finally negotiated an agreement after five successive strike postponements and a strike lasting from Monday September 23 through Monday September 30.

Iowa reporting discontinued after December 1933, Western Kentucky after January 1934, and in the final 10-months volume Divisions IV and V were not available. The record is complete from November 1933 through January 1935 for Divisions I, II and III, exclusive of Western Kentucky and Iowa; representing about 90 per cent of the U. S. annual production.

From these monthly and period summaries have been computed the charts and tables on cost and realization used in this study; also much of the material used in the discussion of wages and earnings during the Code period.

The adoption of Amendment 1, with increased wages and a 7-hour day, 35-hour week, beginning April 1, 1934, established a natural dividing line. All considerations and comparisons split as of that date.

E. Frequency Distribution Tables

Averages are frequently misleading and in any event do not disclose the full picture. To discover the composition of average figures an analysis of each Subdivisional monthly summary was made as to cost of Production, as to Total Cost (including Selling and Administration) and as to the margins between Realization and Total Cost. The result has been set up in such form as to show on all three types of frequency tables, the number of reporting mines which fall in each 10-cent interval, the tons produced by the interval-group, and its per cent of the total production of the Subdivision. In the frequency tables on production cost and total cost, there are shown in addition the average output for each interval-group in tons per day, and its weighted average number of days tipple started. In the tables showing margins per ton (difference between total cost and realization) the additional columns for interval groups cover weighted average number of days tipples started, average output per day, average margin (plus or minus) per ton, percentage sold under pre-Code contracts and their average per ton realization, percentage sold under the Code of schedules of prices and their average per ton realization.

In all cases, the totals are shown for the Subdivision at the foot of the Table.

Samples of these frequency tables appear for a selected month for each Subdivision as published in the April 1934 through January 1935 book.

As an example, take October 1934 production cost in Eastern Subdivision. An examination of summaries discloses that the 160 mines reporting in this month produced 2,334,250 tons in an average of 16.9 tipple starts, at an average producing cost of $1.8738. But the analyst wants to know between what ranges of cost these mines fell; in what narrower ranges the majority of the mines fell - also the majority of the tonnage, and along what points the bulk-line would run. Per contra, there may be little definite showing of bulk - a fairly even distribution of mines through a wide range of frequency groups - and if so, is the weight in tonnage also widely distributed, or narrowly confined? To help answre these and many other questions pertinent to a thoughtful analysis of averages, these frequency tables have been prepared for every Subdivision and every month covered by published Form A summaries.

Below is reproduced the frequency table on Production Cost for Eastern Subdivision, October 1934. An examination makes clear that a more vivid picture may be drawn of what happened among the mines as to production cost than could possibly be drawn from the summary averages alone.

While only a few of these frequency tables have been released in published form (see "Bituminous Coal Statistics for the period April 1934 through January 1935"), they have all been available and carefully considered in this study.

BITUMINOUS COAL

Frequency Table of PRODUCTION
Costs per ton.
(Iten 13 from Form A)

Division I
Subdivision Eastern
Period Covered October 1934

DEEP MINES

Costs Per Ton (under)		No. of mines	Tons Produced	% of Total Tons	Amount	Per Ton	Avg. Output per day	Avg. No. Tipple Starts
	.70							
.70	.80							
.80	.90							
.90	1.00							
1.00	1.10							
1.10	1.20							
1.20	1.30							
1.30	1.40	2	95,566	4.1	$132,664	1.388	4,851	19.7
1.40	1.50	9	142,490	6.1	206,303	1.448	7,772	18.3
1.50	1.60	11	125,245	5.4	196,082	1.566	6,898	18.2
1.60	1.70	17	221,007	9.5	365,184	1.652	13,276	16.6
1.70	1.80	21	371,988	15.9	651,929	1.753	20,664	18.0
1.80	1.90	29	478,849	20.5	882,496	1.843	29,197	16.4
1.90	2.00	17	172,591	7.4	337,210	1.954	10,864	15.9
2.00	2.10	14	215,915	9.2	441,653	2.045	13,949	15.5
2.10	2.20	14	215,989	9.3	459,160	2.126	12,556	17.2
2.20	2.30	8	148,169	6.3	329,170	2.222	8,995	16.5
2.30	2.40	3	15,590	.7	37,061	2.377	1,009	15.5
2.40	2.50	5	43,249	1.9	106,119	2.454	2,766	15.6
2.50	& Over	10	87,602	3.7	228,896	2.613	5,258	16.7
	Total	160	2,334,250	100.0	$4,373,927	1.874	138,055	16.9

F. Operating Costs Projected to Different Working Days Per Month

a. Method of Arriving at Cost Per Day: In addition to the actual mine costs, the operator was requested to report a breakdown of labor expense and supply expense between working days, idle days and Sundays and holidays. This breakdown made it possible to get an average cost per day of labor and supplies for each working day, idle day, and Sunday and holiday. The total production in net tons was also put on per day basis.

b. Projection to Various Numbers of Work-days in Month: It was desired to discover the best approximation possible to show the effect on costs had more or fewer working days been available during the period, assuming that all conditioning factors remained the same as in the actual cost data. Although the resulting projections to bases of 12, 14, 16, 18, 20 and 31 days represent the theoretical costs, a test projection to the actual days worked indicated in most cases a sufficiently close approximation to the actual costs to make these projections at least reasonably indicative of the effect of days worked on Production Costs. (*)

(*) Per day Items: the output per day in tons, labor costs per day and supply cost per day as reported were projected to the desired number of days by multiplication. As the days worked in a period increase, production increases accordingly, so that idle day expense per ton drops. Sundays and holidays, of course, remain the same in number but, as production increases, the cost per ton drops.

Lump Sum Items: "Items Usually on a Fixed Amount Basis" are divided on Form A as follows:

Item 9a - Taxes on Mine Property & Equipment
9b - Insurance (all Classes except compensation)
9c - Company House Expenses
9d - Depreciation

These items are not affected as to their amount by either high or low production but stay on practically the same basis for each month. The total amount of these items is carried throughout the projection without change, the cost per ton decreasing as the days worked and, therefore, production increases.

Charges Usually on a Per-Ton Basis:

Item 11a - Royalties paid or accrued
11b - Operators' association dues and assessments
11c - Compensation Insurance (paid or accrued)
11d - Code Authority Expense
11e - Depletion

All of these items are usually increased in amount by the tons produced, but the cost per ton is not changed. The projection, therefore, is first to a one-day total amount, by multiplication on the day's tonnage production and from one day's cost the projection is extended again by multiplication to the various days worked.

c. Months Selected for Projections and Reasons: The months of November and December, 1935, May, 1934, and January, 1935, were used as sample months for projections. These three months are very representative as to number of mines reporting and the number of days worked considering the conditions prevailing in the industry during the 15 months period covered by the cost Forms A and B. The projections appear in the appropriate volumes as published

G. Basic Data Recommended as Essential to full Factual Knowledge: At the time the Bituminous Coal Conservation Act of 1935 was under consideration before its passage, the Bituminous Coal Section, on request, submitted through the Director of Research and Planning, comments on its various provisions. These comments closed with the following recommended studies: (1) costs of production, selling and administration; (2) realization from sales; (3) profits and capital investment; (4) distribution of coal geographically by both consuming and producing districts; (5) wage earnings.

It is the reasoned judgment of the Bituminous Coal Unit that these studies, conducted concurrently, form the minimum factual basis for any economic program involving bituminous coal, when taken in conjunction with the statistics of production, men employed, productivity per man-day, earnings and other enlightening data embraced in the continuing records of the Bureau of Mines and Bureau of Labor Statistics. The minutiae of the necessary forms and the periodicity of reporting may well be left to those who may in good time be charged with such studies.

One closing comment cannot be omitted: public interest, to say nothing of fairness to those operators who so faithfully cooperate by submitting their reports without compulsion, would seem to suggest that any factual reporting seriously undertaken along lines such as those mentioned should be industry-wide. Omission of a considerable percentage of the total tonnage representation in any producing area detracts from the conclusiveness of over-all averages and their relationships.

APPENDIX II - SECTION A

Wage Rates - Bituminous Coal Industry

Any attempt to deal with the wage problems in an industry requires a comprehensive and accurate knowledge of the existing wage structure. The great number of occupations covered in the mining of coal; the geological factors and conditions such as thickness of seam, the character of the coal seam, presence of impurities in the coal; geographical location; the economic condition of the industry; the seasonal demand for coal; the story of unionization, etc., have all made the wage problem particularly acute in this industry. The wage negotiations occupied a prominent place in the formulation of the Coal Code and the problem of finding a solution to the many conflicting interests immediately arose. The historical data on wages which were necessary and essential in reviewing this problem were not immediately at hand.

For the years 1912 to 1922 Professor Fisher and Dr. Bezanson have presented the story of wage rates in their book, "Wage Rates and Working Time in the Bituminous Coal Industry". Their analysis of the Coal Commission data gives a detailed picture of the rate structure in union, non-union, and irregular fields. (*) However, in some cases, in the union fields, their tables present weighted average rates for districts and fields which conceal the number of actual rates in effect. In the irregular fields weighted rates only have been reported and no segregation was made of the rates under union contract as separate from non-union.

Prior to 1912 and since 1922 no summarization of the wage rate data has been available. (**) Unfortunately, there can be no way to tell the story for the non-union fields. In this 11 year interval between 1922 and 1933 the union lost much of its power and for this period the scale of wages paid to the majority of men in the coal industry is not available.

(*) See Appendix tables, Fisher, W.E. and Bezanson, A., "Wage Rates and Working Time in the Bituminous Coal Industry, 1912 to 1922".

Union areas -- fields in which the great majority of operators have maintained affiliations with the union throughout the entire period.

Non-union areas -- fields which for practical purposes have resisted all efforts towards unionization.

Irregular areas -- fields which have operated part of the time on a union and part on a non-union basis.

(**) The Bureau of Labor Statistics has made biennial surveys of daily and hourly earnings by states since 1919.

The purpose of this study has been to bring together some of the more important data on wage rates for those fields which had a history of union affiliation prior to the period of the Bituminous Coal Code. A complete history of wage rates for fields which worked under contract with the United Mine Workers was not possible. For the states of Illinois, Indiana, Ohio and Western Pennsylvania, it was possible to project the data back to 1898. For all the other areas, 1912 was chosen as the starting point. No data are presented for those fields which have come under union contract since the inauguration of the Coal Code.

A comprehensive statistical presentation of wage rates and their analysis and evaluation, with the accompanying problems of wage movements and trends, differentials and employment opportunity was too tremendous in scope and magnitude to be undertaken. This study must necessarily be presented in the form of reference and work material.

The presentation of tables fall into three parts:

1. Illinois, Indiana, Ohio, and Western Pennsylvania, (*) 1898 to 1937.

2. The Southwestern Interstate Field -- Kansas, Missouri, Arkansas and Oklahoma, 1912 to 1937.

3. Outlying Districts -- Central Pennsylvania, Michigan, Northern West Virginia, Kanawha, West Virginia, Western Kentucky, Iowa, Colorado, Northern and Southern Wyoming, and Montana, (**) 1912 to 1937.

There are other districts and fields which have worked under union contract at some time or other during the period 1912 to 1933. These fields have been omitted from the study for various reasons but their omission, with the exception of Washington, does not detract from the general picture, since in all cases, in terms of men involved who were under contract, they represent a relatively small portion of the industry. These fields were:

1. Western Maryland and Upper Potomac. This area was under contract from November 1, 1917 to March 31, 1922. The contract did not specify a wage scale but was merely a working agreement dealing with employee rights and settlement of disputes and grievances.

2. New River, West Virginia. In 1913 a contract was negotiated in this field and by 1915 operators representing a large portion of the field were under union contract. The union extended its sphere of influ-

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(*) Western Pennsylvania includes Allegheny, Armstrong, Beaver, Butler, Greene, Lawrence, Mercer and Washington Counties.

(**) Washington was not included as time did not permit the finishing of this table.

ence during the war and able to maintain contractual relations until 1921. The omission of this field was necessitated because the rates reported in the contracts were too sketchy to form a continuous story.

3. Panhandle, West Virginia. The union had established wage contracts with a considerable number of operators by 1912. Data on wage rates, however, were not available.

4. Cabin Creek, Kanawha District, West Virginia. A group of operators had a contract from 1913 to 1922.

5. Coal River, West Virginia. Union gained recognition in 1913 and maintained contracts until 1922.

6. Southeastern Kentucky and Tennessee. An operator's association in this area had a contract from November 1, 1917 to March 31, 1922. Outside this association were several companies, the Falls Branch Coal Company and the Woolridge-Jellico Coal Company, which operated under union contract from 1912 to 1922; and the Tracy City Branch of the Nashville, Chattanooga and St. Louis Railroad, which had a contract from 1920 to 1922.

7. Alabama. A large part of this field was under contract for the period May 15, 1918 to March 31, 1920. The wage rates reported could not be used as they were in terms of a flat increase over the previous scale which was unknown.

8. Texas. A few mines in this field were under union contract.

9. North Dakota. A coal operator's association in this area had a contract in 1919 and 1920.

It was also found necessary to limit the study to certain basic occupations in an attempt to reduce the work of collecting and tabulating. The occupations selected were:

Day Wage Rates

1. Trackmen -- representing the skilled inside day wage scale.(*)
2. Outside Common Labor -- representing unskilled labor outside the mine.

Tonnage Rates

1. Pickmining
2. Loading after machines
3. Machine cutting

(*) The rates for trackmen in some instances are slightly higher than other occupations commonly known as the inside skilled group. This is true in Michigan, Montana and for the earlier years in the Central Competitive field.

In addition to the above occupations, rates for machine cutters and helpers were also reported for those areas where the practice of paying machine cutters by the day instead of the ton was prevalent and since 1928 the scale for mechanical loading occupations was shown for those areas which reported these data.

In Illinois and Ohio it was necessary to further limit the study to just those rates for the basing points, Danville, and Hocking Valley, respectively. It was impossible to show all the rates in effect in the many subdistricts. For example, the Illinois contract for the years 1920 to 1922 reports 59 rates for pick-mining in the nine subdistricts and Ohio had approximately 15 subdistricts with as many rates. The same problem of selecting essential data was also true for the Southwestern Inter-State Field. Here it was the practice to report not only rates for fields but rates for individual mines which in some instances might mean as many as 50 different rates for one occupation. The procedure followed was to report only those rates which would be applied generally to an entire field.

The story of collective bargaining, wage negotiations and labor disputes, a necessary corollary to these tables, has already been covered in great detail in Chapter IV, Section A. Reference to this section will set the background and give the detailed picture necessary in following the wage rate tables.

APPENDIX III

BITUMINOUS COAL INDUSTRY REPORT

The material in this appendix relates to

"Costs, Realization and Margins" by months, from November 1933 through January 1935. It comprises basic material covered in Chapter 6.

TABLE 1

SECTION A

BITUMINOUS COAL INDUSTRY — ILLINOIS, INDIANA, OHIO, WESTERN PENNSYLVANIA

Hourly and Daily Wage Rates for Trackmen[a] 1898 to 1937

ILLINOIS						INDIANA AND INDIANA BRAZIL BLOCK				OHIO				WESTERN PENNSYLVANIA			
				ALL DISTRICTS				ALL DISTRICTS			HOCKING VALLEY				ALL DISTRICTS		
YEAR	PERIOD OF WAGE AGREEMENT	CITY OF JOINT INTERSTATE CONFERENCE	HOURS WORKED PER DAY	HOURLY RATE	DAILY RATE	YEAR	PERIOD OF WAGE AGREEMENT	HOURLY RATE	DAILY RATE	YEAR	PERIOD OF WAGE AGREEMENT	HOURLY RATE	DAILY RATE	YEAR	PERIOD OF WAGE AGREEMENT	HOURLY RATE	DAILY RATE
1898	APR. 1, 1898 - MAR 31, 1899	COLUMBUS	8	.238	1.90	1898	APR 1, 1898 - MAR 31, 1899	.238	1.90	1898	APR 1, 1898 - MAR. 31, 1899	.238	1.90	1898	APR 1, 1898 - MAR 31, 1899	.238	1.90
1899	APR. 1, 1899 - MAR 31, 1900	PITTSBURGH	8	.238	1.90	1899	APR 1, 1899 - MAR 31, 1900	.238	1.90	1899	APR 1, 1899 - MAR. 31, 1900	.238	1.90	1899	APR 1, 1899 - MAR 31, 1900	.238	1.90
1900	APR. 1, 1900 - MAR. 31, 1901	INDIANAPOLIS	8	.285	2.28	1900	APR. 1, 1900 - MAR 31, 1901	.285	2.28	1900	APR. 1, 1900 - MAR. 31, 1901	.285	2.28	1900	APR. 1, 1900 - MAR 31, 1901	.285	2.28
1901	APR. 1, 1901 - MAR 31, 1902	COLUMBUS	8	.285	2.28	1901	APR. 1, 1901 - MAR 31, 1902	.288	2.30 [c]	1901	APR. 1, 1901 - MAR. 31, 1902	.285	2.28	1901	APR. 1, 1901 - MAR 31, 1902	.285	2.28
1902	APR. 1, 1902 - MAR. 31, 1903	INDIANAPOLIS	8	.286	2.28	1902	APR 1, 1902 - MAR. 31, 1903	.288	2.30	1902	APR 1, 1902 - MAR. 31, 1903	.285	2.28	1902	APR. 1, 1902 - MAR 31, 1903	.285	2.28
1903	APR 1, 1903 - MAR. 31, 1904	INDIANAPOLIS	8	.320	2.56	1903	APR 1, 1903 - MAR 31, 1904	.320	2.56	1903	APR. 1, 1903 - MAR. 31, 1904	.320	2.56	1903	APR. 1, 1903 - MAR. 31, 1904	.320	2.56
1904	APR. 1, 1904 - MAR. 31, 1906	INDIANAPOLIS	8	.303	2.42	1904	APR. 1, 1904 - MAR 31, 1906	303	2.42	1904	APR. 1, 1904 - MAR. 31, 1906	.303	2.42	1904	APR 1, 1904 - MAR. 31, 1906	.303	2.42
1906	APR 1, 1906 - MAR 31, 1908	INDIANAPOLIS INDIVIDUAL STATE AGREE	8	.320	2.56	1906	APR 1, 1906 - MAR 31, 1908	.320	2.56	1906	APR. 1, 1906 - MAR 31, 1908	.320	2.56 [d]	1906	APR. 1, 1906 - MAR 31, 1908	.320	2.56
1908	APR. 1, 1908 - MAR. 31, 1910	TOLEDO ILL MADE SEPARATE AGREE	8	.320	2.56	1908	APR 1, 1908 MAR. 31, 191-	.320	2.56	1908	APR. 1, 1908 - MAR 31, 1910	.320	2.56	1908	APR 1, 1908 - MAR 31, 1910	.320	2.56
1910	APR. 1, 1910 - MAR. 31, 1912	TOLEDO INDIVIDUAL STATE AGREE	8	.338	2.70	1910	AUG. 1, 1910 - APR 1, 1912	.338	2.70	1910	APR. 1, 1910 - MAR. 31, 1912	.338	2.70	1910	APR 1, 1910 - MAR 31, 1912	.338	2.70
1912	APR. 1, 1912 - MAR 31, 1914	INDIANANLIS	8	.355	2.84	1912	APR. 1, 1912 - MAR. 31, 1914	.355	2.84	1912	APR 1, 1912 - MAR. 31, 1914	355	2.84	1912	APR 1, 1912 - MAR 31, 1914	.355	2.84
1914	APR. 1, 1914 - MAR. 31, 1916	CHICAGO INDIVIDUAL STATE AGREEMENTS	8	355	2.84	1914	APR 1, 1914 - MAR. 31, 1916	.355	2.84	1914	JULY 15, 1914 - MAR. 31, 1916	.355	2.84	1914	APR 1, 1914 - MAR. 31, 1916	.355	2.84
1916	APR 1, 1916 - MAR. 31, 1918	NEW YORK	8	.372	2.98	1916	APR. 1, 1916 - MAR. 31, 1918	.372	2.98	1916	APR 1, 1916 - MAR. 31, 1918	.372	2.98	1916	APR 1, 1916 - MAR. 31, 1918	372	2.98
1917	APR 16, 1917 - MAR 31, 1918	NEW YORK	8	.450	3.60	1917	APR 16, 1917 - MAR 31, 1918	.450	3.60	1917	APR 16, 1917 - MAR 31, 1918	.450	3.60	1917	APR 16, 1917 - MAR 31, 1918	450	3.60
1917	NOV. 1, 1917 for war period and not to exceed two years from APR 1, 1918 [e]	WASHINGTON	8	.625	5.00	1917	NOV. 1, 1917 - period not to exceed 2 years from APR 1, 1918	.625	5.00	1917	NOV. 1, 1917 for war period not to exceed 2 years from APR 1, 1918	.625	5.00	1917	NOV. 1, 1917 - MAR 31, 1920	.625	5.00
1919	DEC 10, 1919 [e] - MAR 31, 1920 "GARFIELD AWARD"	GARFIELD AWARD	8	.712	5.70	1919	DEC. 15, 1919 - MAR 31, 1920 "Garfield award"	.712	5.70	1919	DEC. 10, 1919 [e] - MAR 31, 1920 "Garfield award"	.712	5.70	1919	DEC. 15, 1919 - MAR. 31, 1920 "Garfield award."	.712	5.70
1920	APR 1, 1920 - MAR. 31, 1922	NEW YORK	8	.750	6.00	1920	APR. 1, 1920 - MAR. 31, 1922	.750	6.00	1920	APR. 1, 1920 - MAR 31, 1922	750	6.00	1920	APR 1, 1920 - MAR 31, 1922	.750	6.00
1920	AUG 16, 1920 - MAR 31, 1922	COLUMBUS	8	.938	7.50	1920	AUG. 16, 1920 - MAR 31, 1922	.938	7.50	1920	AUG 16, 1920 - MAR 31, 1922	.938	7.50	1920	AUG. 16, 1920 - MAR. 31, 1922	.938	7.50
1922	AUG. 16, 1922 - MAR. 31, 1923	CLEVELAND INDIVIDUAL STATE AGREE	8	.938	7.50	1922	AUG. 16, 1922 - MAR 31, 1923	.938	7.50 [b]	1922	AUG 16, 1922 - MAR 31, 1923	.938	7.50	1922	AUG 16, 1922 - MAR 31, 1923	.938	7.50
1923	APR. 1, 1923 - MAR. 31, 1924	NEW YORK	8	.938	7.50	1923	APR. 1, 1923 - MAR 31, 1924	.938	7.50 [b]	1923	APR. 1, 1923 - MAR. 31, 1924	.938	7.50	1923	APR. 1, 1923 - MAR. 31, 1924	.938	7.50
1924	APR 1, 1924 - MAR 31, 1927	JACKSONVILLE	8	.938	7.50	1924	APR 1, 1924 - MAR. 31, 1927	.938	7.50 [b]	1924	JULY 16, 1924 - MAR 31, 1927	.938	7.50	1924	APR. 1, 1924 - MAR. 31, 1927	.938	7.50
1928	SEPT. 16, 1928 - MAR. 31, 1932		8	.763	6.10	1928	NOV. 1, 1928 - MAR 31, 1930	.763	6.10	1928	SEPT. 1, 1928 - MAR 31, 1930 [a]	.625	5.00	1928			
1930			8	.763	6.10	1930	APR 1, 1930 - MAR 31, 1931	.763	6.10 [b]	1930	NON - UNION			1930	NON - UNION		
1931			8	.763	6.10	1931	APR 1, 1931 - MAR 31, 1932	.763	6.10 [b]	1931				1931	[f]		
1932	AUG 10, 1932 - MAR. 31, 1933		8	.625	5.00	1932	SEPT. 10, 1932 - MAR 31, 1933	.572	4.575 [b]	1932				1932	[f]		
1933	APR. 1, 1933 - MAR. 31, 1935		8	.625	5.00	1933		.572	4.575 [c]	1933	JUNE 15, 1933 - "UNTIL STATE AGREEMENT MADE" [d]	.410	3.28	1933	[f]		
BITUMINOUS COAL CODE						BITUMINOUS COAL CODE				BITUMINOUS COAL CODE				BITUMINOUS COAL CODE			
1933	OCT 2, 1933 - MAR 31, 1934		8	.625	5.00	1933	OCT 2, 1933 - MAR 31, 1934	.572	4.575	1933	OCT. 2, 1933 - MAR 31, 1934	.575	4.60	1933	OCT 2, 1933 - MAR. 31, 1934	.575	4.60
AMENDMENT I						AMENDMENT I				AMENDMENT I				AMENDMENT I			
1934	APR. 1, 1934 - MAR. 31, 1935		7	.714	5.00	1934	APR 1, 1934 - MAR 31, 1935	.655	4.575	1934	APR 1, 1934 - MAR 31, 1935	.714	5.00	1934	APR. 1, 1934 - MAR. 31, 1935	.714	5.00
1935	OCT. 1, 1935 - MAY 31, 1937		7	.786	5.50	1935	OCT. 1, 1935 - MAY 31, 1937	.725	5.075	1935	OCT 1, 1935 - MAY 31, 1937	.786	5.50	1935	OCT. 1, 1935 - MAY 31, 1937	.786	5.50

a/ Source: Wage Contracts of United Mine Workers of America

b/ The strike was officially discontinued December 10, 1919. Just when the mines were opened in certain fields is not known — probably not until December 15 or 16.

c/ This contract for a small group of operators — Central Ohio Coal Operators Association. The rest of Ohio was operating non-union.

d/ This contract for a small group of operators in Southern Ohio.

e/ The Pittsburgh Terminal Coal Corporation had a contract with the following rates

June 23, 1931 to June 30, 1932	$4.25	per day
July 1, 1932 to June 30, 1933	3.60	" "
July 1, 1933 to Code	5.68	" "

a/ Brazil Block rate was $2.28 from April 1, 1901 to October 1, 1901 and $2.30 from October 1, 1901 to March 31, 1902.

b/ No contracts could be located in this period for Brazil Block. This district had become almost entirely a strip mining field.

c/ Brazil Block had a contract from July 1, 1933 - March 31, 1935 at $4.575 per day

d/ Strike in Ohio from April 1, 1906 to July 15, 1906 but some mines paying demands and working.

SECTION A

BITUMINOUS COAL INDUSTRY — ILLINOIS, INDIANA, OHIO AND WESTERN PENNSYLVANIA

Hourly and Daily Wage Rates for Outside Common Labor[1] 1898 to 1937

ILLINOIS						INDIANA AND INDIANA BRAZIL BLOCK				OHIO					WESTERN PENNSYLVANIA			
Year	Period of Wage Agreement	City of Joint Interstate Conference	Hours Worked per day	All Districts hourly rate	All Districts daily rate	Year	Period of Wage Agreement	All Districts hourly rate	All Districts daily rate	Year	Period of Wage Agreement	Hocking Valley hourly rate	Hocking Valley daily rate	Year	Period of Wage Agreement	All Districts hourly rate	All Districts daily rate
1898	Apr. 1, 1898 - Mar. 31, 1899	Columbus	8	a/		1898	Apr. 1, 1898 - Mar. 31, 1899	a/		1898	Apr. 1, 1898 - Mar. 31, 1899	a/		1898	Apr. 1, 1898 - Mar. 31, 1899	a/	
1899	Apr. 1, 1899 - Mar. 31, 1900	Pittsburgh	8	a/		1899	Apr. 1, 1899 - Mar. 31, 1900	a/		1899	Apr. 1, 1899 - Mar. 31, 1900	a/		1899	Apr. 1, 1899 - Mar. 31, 1900	a/	
1900	Apr. 1, 1900 - Mar. 31, 1901	Indianapolis	8	b/		1900	Apr. 1, 1900 - Mar. 31, 1901	c/		1900	Apr. 1, 1900 - Mar. 31, 1901	j/		1900	Apr. 1, 1900 - Mar. 31, 1901	c/	
1901	Apr. 1, 1901 - Mar. 31, 1902	Columbus	8	.225	1.80	1901	Apr. 1, 1901 - Mar. 31, 1902	c/		1901	Apr. 1 1901 - Mar. 31, 1902	j/		1901	Apr. 1, 1901 - Mar. 31, 1902	c/	
1902	Apr. 1, 1902 - Mar. 31, 1903	Indianapolis	8	.225	1.80	1902	Apr. 1, 1902 - Mar. 31, 1903	.225 / .180	1.80 d/ / 1.44 e/	1902	Apr. 1, 1902 - Mar. 31, 1903	j/		1902	Apr. 1, 1902 - Mar. 31, 1903	c/	
1903	Apr. 1, 1903 - Mar. 31, 1904	Indianapolis	8	.253	2.025	1903	Apr. 1, 1903 - Mar. 31, 1904	.253 / .203	2.025 d/ / 1.62 e/	1903	Apr. 1, 1903 - Mar. 31, 1904	12½% advance		1903	Apr. 1, 1903 - Mar. 31, 1904	c/	
1904	Apr. 1, 1904 - Mar. 31, 1906	Indianapolis	8	.239	1.91	1904	Apr. 1, 1904 - Mar. 31, 1906	.239 / .191	1.913 d/ / 1.53 e/	1904	Apr. 1, 1904 - Mar. 31, 1906	Reduced ½ Advance 1903		1904	Apr. 1, 1904 - Mar. 31, 1906	c/	
1906	Apr. 1, 1906 - Mar. 31, 1908	Indianapolis Individual State Agree	8	.253	2.025	1906	April, 1906 - Mar. 31, 1908	.253 / .203	2.025 d/ / 1.62 e/	1906	Apr. 1, 1906 - Mar. 31, 1908	295	2.36 k/	1906	Apr. 1, 1906 - Mar. 31, 1908	c/	
1908	Apr. 1, 1908 - Mar. 31, 1910	Toledo Ill made separate Agree	8	.253	2.025	1908	Apr. 1, 1908 - Mar. 31, 1910	.253 / .203	2.025 d/ / 1.62 e/	1908	Apr. 1, 1908 - Mar. 31, 1910	295	2.36	1908	Apr. 1 1908 - Mar. 31, 1910	c/	
1910	Apr. 1, 1910 - Mar. 31, 1912	Toledo Individual State Agree	8	.266	2.13	1910	Aug. 1, 1910 - Apr. 1, 1912	.266	2.13 d/ / e/	1910	Apr. 1, 1910 - Mar. 31, 1912	311	2.49	1910	Apr. 1, 1910 - Mar. 31, 1912	55% advance	
1912	Apr. 1, 1912 - Mar. 31, 1914	Indianapolis	8	.281	2.249	1912	Apr. 1, 1912 - Mar. 31, 1914	.280	2.24	1912	Apr. 1, 1912 - Mar. 31, 1914	.328	2.62	1912	Apr. 1, 1912 - Mar. 31, 1914	.250	2.00
1914	Apr. 1, 1914 - Mar. 31, 1916	Chicago Individual Joint Agreements	8	.281	2.249	1914	Apr. 1, 1914 - Mar. 31, 1916	.280	2.24	1914	July 15, 1914 - Mar. 31, 1916	.328	2.62	1914	Apr. 1, 1914 - Mar. 31, 1916	.250	2.00
1916	Apr. 1, 1916 - Mar. 31, 1918	New York	8	.295	2.36	1916	Apr. 1, 1916 - Mar. 31, 1918	.294	2.352	1916	Apr. 1, 1916 - Mar. 31, 1918	.344	2.75	1916	Apr. 1, 1916 - Mar. 31, 1918	.263	2.10
1917	Apr. 16, 1917 - Mar. 31, 1918	New York	8	.370	2.96	1917	Apr. 16, 1917 - Mar. 31, 1918	.369	2.95	1917	Apr. 16, 1917 - Mar. 31, 1918	.419	3.35	1917	Apr. 16, 1917 - Mar. 31, 1918	.338	2.70
1917	Nov. 1, 1917 - for war period & not to exceed 2 years from Apr. 1, 1918 h/	Washington	8	.545	4.36	1917	Nov. 1, 1917 - for war period & not to exceed 2 years from Apr. 1, 1918	.544	4.35	1917	Nov. 1, 1917 - for war period & not to exceed 2 years from Apr. 1, 1918 h/	.594	4.75	1917	Nov. 1, 1917 - Mar. 31, 1920	.513	4.10
1919	Dec. 10, 1919 - Mar. 31, 1920 "Garfield award"	Garfield Award	8	.621	4.97	1919	Dec. 15, 1919 - Mar. 31, 1920 "Garfield award"	.620	4.96	1919	Dec. 10, 1919 - Mar. 31, 1920 "Garfield award"	.678	5.42	1919	Dec. 15, 1919 - Mar. 31, 1920 "Garfield award"	.584	4.67
1920	Apr. 1, 1920 - Mar. 31, 1922	New York	8	.670	5.36	1920	Apr. 1, 1920 - Mar. 31, 1922	.669	5.35	1920	Apr. 1, 1920 - Mar. 31, 1922	.719	5.75	1920	Apr. 1, 1920 - Mar. 31, 1922	.638	5.10
1920	Aug. 16, 1920 - Mar. 31, 1922	Columbus	8	.858	6.86	1920	Aug. 16, 1920 - Mar. 31, 1922	.856	6.85	1920	Aug. 16, 1920 - Mar. 31, 1922	.906	7.25	1920	Aug. 16, 1920 - Mar. 31, 1922	.825	6.60
1922	Aug. 16, 1922 - Mar. 31, 1923	Cleveland Individual State Agree	8	.858	6.86	1922	Aug. 16, 1922 - Mar. 31, 1923	.856	6.85 i/	1922	Aug. 16, 1922 - Mar. 31, 1923	.906	7.25	1922	Aug. 16, 1922 - Mar. 31, 1923	.825	6.60
1923	Apr. 1, 1923 - Mar. 31, 1924	New York	8	.858	6.86	1923	Apr. 1, 1923 - Mar. 31, 1924	.856	6.85 i/	1923	Apr. 1, 1923 - Mar. 31, 1924	.906	7.25	1923	Apr. 1, 1923 - Mar. 31, 1924	.825	6.60
1924	Apr. 1, 1924 - Mar. 31, 1927	Jacksonville	8	.858	6.86	1924	Apr. 1, 1924 - Mar. 31, 1927	.856	6.85 i/	1924	July 16, 1924 - Mar. 31, 1927	.906	7.25	1924	Apr. 1, 1924 - Mar. 31, 1927	.825	6.60
1928	Sept 16, 1928 - Mar. 31, 1930		8	.701	5.61	1928	Nov. 1, 1928 - Mar. 31, 1930	.700	5.60 j/	1928	Sept. 1, 1928 - Mar. 31, 1930 3/		l/	1928			
1930			8	.701	5.61	1930	Apr. 1, 1930 - Mar. 31, 1931	.700	5.60 j/	1930	NON-UNION			1930	NON-UNION		
1931			8	.701	5.61	1931	Apr. 1, 1931 - Mar. 31, 1932	.700	5.60 j/	1931				1931	m/		
1932	Aug. 10, 1932 - Mar. 31, 1933		8	.500	4.00	1932	Sept. 10, 1932 - Mar. 31, 1935	.525	4.20 j/	1932				1932	m/		
1933	Apr. 1, 1933 - Mar. 31, 1935		8	.500	4.00	1933		.525	4.20 j/	1933	June 15, 1933 - "until State Agreement made" n/	.390	3.12	1933	m/		
Bituminous Coal Code						Bituminous Coal Code				Bituminous Coal Code				Bituminous Coal Code			
1933	Oct 2, 1933 - Mar. 31, 1934		8	.500	4.00	1933	Oct 2, 1933 - Mar 31, 1934	.525	4.20	1933	Oct 2, 1933 - Mar. 31, 1934	.450	3.80	1933	Oct 2, 1933 - Mar. 31, 1934	.450	3.60
Amendment 1						Amendment 1				Amendment 1				Amendment 1			
1934	Apr 1, 1934 - Mar. 31, 1935		7	.571	4.00	1934	Apr. 1, 1934 - Mar. 31, 1935	.600	4.20	1934	Apr 1, 1934 - Mar. 31, 1935	.571	4.00	1934	Apr. 1, 1934 - Mar 31, 1935	.571	4.00
1935	Oct. 1, 1935 - Mar 31, 1937		7	.643	4.50	1935	Oct. 1, 1935 - Mar 31, 1937	.671	4.70	1935	Oct. 1, 1935 - Mar. 31, 1937	.643	4.50	1935	Oct. 1, 1935 - Mar. 31, 1937	.643	4.50

1/ Source: Wage contracts of the United Mine Workers of America
2/ The strike was officially discontinued December 10, 1919. Just when the mines were opened in certain fields is not known — probably not until December 15 or 16.
3/ This contract for a small group of operators — Central Ohio Coal Operators Association The rest of Ohio was operating non-union.
4/ This contract for a small group of operators in Southern Ohio.
5/ The Pittsburgh Terminal Coal Corporation had a contract with the following rates:

June 23, 1931 to June 30, 1932	3.20	Dollars per day
July 1, 1932 to June 30, 1933	2.56	" " "
July 1, 1933 to Code	2.80	" " "

a/ The employing of outside day laborers around the mine, and wages to be paid the same, shall be left entirely to the employers, and the question of uniform wages for outside labor be referred to the next Interstate Joint Convention.
b/ All outside labor now receiving $1.50 or over be advanced 20 per cent — all receiving less than $1.50 to be advanced and them advanced 20 per cent.
c/ Not reported
d/ On and north of the B. & O. S. W. Brasil Block did not report
e/ South of the B. & O. S. W. Brasil Block did not report.
f/ South of the B. & O. S. W. the wages shall be $1.43½ per day with 10½ cents per day in addition thereto commencing April 1, 1911 and each year thereafter until the scale south equals that north of the B. & O. S. W.
g/ No contracts could be located in this period for Brasil Block. This district had become almost entirely a strip mining field.
h/ The rate for Brasil Block was $5.00.
i/ Brasil Block had a contract from July 1, 1933 to March 31, 1935 at $4.20.
j/ Special prices according to nature of work
k/ Data not available.
l/ Strike in Ohio from April 1, 1906 to July 16, 1906 but some mines paying demands and working.

TABLE 3

SECTION A

BITUMINOUS COAL INDUSTRY -- ILLINOIS, INDIANA, OHIO, WESTERN PENNSYLVANIA

Daily Wage Scale for Mechanical Loading Occupations 1/ 1926 to 1937

MECHANICAL LOADING OCCUPATIONS	ILLINOIS						INDIANA							OHIO						W. PENNSYLVANIA			
				BITUMINOUS COAL CODE							BITUMINOUS COAL CODE					BITUMINOUS COAL CODE				BITUMINOUS COAL CODE		
	JUNE 16, 1928 MAR. 31, 1932	AUG. 10, 1932 MAR. 31, 1933	APR. 1, 1933 MAR. 31, 1935	OCT. 2 1933 MAR. 31, 1934	APR. 1, 1934 MAR. 31, 1935	OCT. 1, 1935 MAR. 31, 1937	NOV. 1 1928 MAR. 31 1930	APR. 1, 1930 MAR. 31. 1931	APR. 1. 1931 MAR. 31 1932	SEPT. 10 1932 MAR. 31 1935	OCT. 2 1933 MAR. 31 1934	APR. 1 1934 MAR. 31 1935	OCT. 1 1935 MAR. 31 1937	SEPT. 1 1928 MAR. 31 1930 a/	1930 TO 1933	OCT. 2 1933 MAR. 31 1934 b/	APR. 1 1934 MAR. 31 1935 b/	OCT. 1 1935 MAR. 31 1937 b/	1928 TO 1933	OCT. 2 1933 MAR. 31 1934	APR. 1 1934 MAR. 31 1935	OCT. 1 1935 MAR. 31 1937
CONVEYORS																							
LOADERS	8.04	5.70	5.70	5.70	5.70	6.40	9.00	9.00	9.00	6.75	6.75	6.75	7.45	6.00									
OPERATORS														7.50	NON-UNION				NON-UNION				
CUTTING MACHINES																							
CUTTING MACHINE OPERATOR	10.07	7.00	7.00	7.00	7.00	7.70	9.00	9.00	9.00	6.75	6.75	6.75	7.45			6.00	6.86	7.56					
CUTTING MACHINE HELPER	10.07	7.00	7.00	7.00	7.00	7.70	9.00	9.00	9.00	6.75	6.75	6.75	7.45										
SHEARING MACHINE OPERATOR		6.00	6.00	6.00	6.00	6.70	9.00	9.00	9.00	6.75	6.75	6.75	7.45			6.00	6.86	7.56					
SHEARING MACHINE HELPER						6.70	9.00	9.00	9.00	6.75	6.75	6.75	7.45										
CUTTING & SHEARING OPERATOR																				5.80	6.20	6.90	
CUTTING & SHEARING HELPER																				5.80 c/	6.20 c/	6.90 c/	
DRILLER OPERATOR																				5.08 c/	5.48 c/	5.98 c/	
DRILLER HELPER																				4.36 c/	4.76 c/	5.26 c/	
ENTRY DRIVER OPERATOR		7.00	7.00	7.00	7.00	7.70																	
MECHANICAL LOADERS																							
OPERATOR, COAL	10.07	7.00	7.00	7.00	7.00	7.70	9.00	9.00	9.00	6.75	6.75	6.75	7.45	7.50		6.00	6.86	7.56		5.80	6.20	6.90	
HELPER, COAL	9.00	6.25	6.25	6.25	6.25	6.95	9.00	9.00	9.00	6.75	6.75	6.75	7.45	7.00		4.88	5.28	5.98		4.76	5.16	5.86	
OPERATOR, ROCK		6.00	6.00	6.00	6.00	6.70				6.00	6.00	6.00	6.70			5.24	5.64	6.34					
PIT CAR LOADERS		5.70	5.70	5.70	5.70	6.40																	d/
44 C LOADER OPERATOR																				5.52	5.92	6.62	
44 C LOADER HELPER																				4.76	5.16	5.86	
DRILLERS, SNUBBERS, & SHOOTERS	8.20	5.75	5.75	5.75	5.75	6.45	8.20	8.20	8.20	6.15	6.15	6.15	6.85	6.00									
CLEAN-UP MEN AT FACE		5.70	5.70	5.70	5.70	6.40										4.60	5.00	5.50					

1/ Source: Wage Contracts of United Mine Workers of America

a/ This contract for a small group of operators -- Central Ohio Coal Operators Association
The rest of Ohio was operating non-union

b/ This scale for Eastern Ohio and Panhandle, in Ohio. The Hocking Valley agreement did not report a scale for mechanical loading occupations

c/ Track mounted drilling machine

d/ Pit car loading on a tonnage basis:-

	Thin	Thick
Drilling by hand & loading in rooms when 12 inches of draw slate handled.....	.593	.565
Draw slate supported by top coal.....	---	.525

9837

587

TABLE 4

BITUMINOUS COAL INDUSTRY--ILLINOIS, INDIANA, OHIO, WESTERN PENNSYLVANIA

Tonnage Rates for Pick Mining 1/ 1898 to 1937

(Net Tons)

ILLINOIS

Year	Period of Wage Agreement	City of Joint Interstate Conference	Danville a/ R.O.M.
1898	Apr. 1, 1898 - Mar 31, 1899	Chicago	.40
1899	Apr 1, 1899 - Mar 31, 1900	Pittsburgh	.40
1900	Apr. 1, 1900 - Mar 31, 1901	Indianapolis	.49
1901	Apr 1, 1901 - Mar 31, 1902	Columbus	.49
1902	Apr 1, 1902 - Mar 31, 1903	Indianapolis	.49
1903	Apr 1, 1903 - Mar 31, 1904	Indianapolis	.55
1904	Apr 1, 1904 - Mar 31, 1906	Indianapolis	.52
1906	Apr 1, 1906 - Mar 31, 1908	Indianapolis Individual State Agreements	.55
1908	Apr 1, 1908 - Mar 31, 1910	Toledo Illinois made separate agreement	.55
1910	Apr 1, 1910 - Mar 31, 1912	Toledo Individual State Agreements	58
1912	Apr 1, 1912 - Mar 31, 1914	Indianapolis	61
1914	Apr 1, 1914 - Mar 31, 1916	Chicago Individual State Agreements	.61
1916	Apr 1, 1916 - Mar 31, 1918	New York	64
1917	Apr 16, 1917 - Mar 31, 1918	New York	74
1917	Nov 1, 1917 - for war period & not to exceed 2 yrs from Apr 1, 1918	Washington	84
1919	Dec 10, 1919 2/ - Mar 31, 1920 "Garfield Award"	Garfield Award	9024 e/
1920	Apr 1, 1920 - Mar 31, 1922	New York	1.08
1922	Aug 6, 1922 - Mar 31, 1923	Cleveland Individual State Agreements	1.08
1923	Apr 1, 1923 - Mar 31, 1924	New York	1.08
1924	Apr 1, 1924 - Mar 31, 1927	Jacksonville	1.08
1928	Sept 16, 1928 - Mar 31, 1932		91
1930			.91
1931			91
1932	Aug 10, 1932 - Mar 31, 1933		68
1933	Apr 1, 1933 - Mar. 31, 1935		.68
Bituminous Coal Code			
1933	Oct. 2, 1933 - Mar 31, 1934		68
Amendment 1			
1934	Apr 1, 1934 - Mar 31, 1935		78
1935	Oct 1, 1935 - Mar 31, 1937		.87

INDIANA (EXCEPT BRAZIL BLOCK)

Year	Period of Wage Agreement	Basic Rate ROM	Basic Rate Screened	Less than 3'3" and over 2'9" ROM	Less than 3'3" and over 2'9" Screened	Less than 2'9" down to 2'6" ROM	Less than 2'9" down to 2'6" Screened
1898	Apr 1, 1898 - Mar 31, 1899	.40	.66				
1899	Apr 1, 1899 - Mar 31, 1900	.40	66				
1900	Apr 1, 1900 - Mar 31, 1901	49	80				
1901	Apr 1, 1901 - Mar 31, 1902	.49	.80				
1902	Apr 1, 1902 - Mar 31, 1903	.49	.80	54	.88	59	96
1903	Apr 1, 1903 - Mar 31, 1904	.55	.90	64	.98	.65	1.06
1904	Apr 1, 1904 - Mar 31, 1906	.52	85	.57	.93	62	1.01
1906	Apr 1, 1906 - Mar 31, 1908	56	90	64	.98	65	1.06
1908	Apr 1, 1908 - Mar 31, 1910	55	90	.64	98	.65	1.06
1910	Apr 1, 1910 - Apr 1, 1912	.58	95	67	1.03	.68	1.11
1912	Apr 1, 1912 - Mar 31, 1914	61	1.00	.70	1.08	.71	1.16
1914	Apr 1, 1914 - Mar 31, 1916	61	1.00	.70	1.08	.71	1.16
1916	Apr 1, 1916 - Mar 31, 1918	.64	d/	.73	d/	77	d/
1917	Apr 16, 1917 - Mar 31, 1918	74		.83		.87	
1917	Nov 1, 1917 for war period & not to exceed 2 yrs from Apr 1, 1918	.84		.93		97	
1919	Dec 15, 1919 - Mar 31, 1920 "Garfield Award"	.9504 e/		1.0602 e/		1.1058 e/	
1920	Apr 1, 1920 - Mar 31, 1922	1.08		1.17		1.21	
1922	Aug 16, 1922 - Mar 31, 1923	1.08		1.17		1.21	
1923	Apr 1, 1923 - Mar 31, 1924	1.08		1.17		1.21	
1924	Apr 1, 1924 - Mar 31, 1927	1.08		1.17		1.21	
1928	Nov. 1, 1928 - Mar 31, 1930	91		1.00		1.04	
1930	Apr 1, 1930 - Mar 31, 1931	.91		1.00		1.04	
1931	Apr 1, 1931 - Mar 31, 1932	.91		1.00		1.04	
1932	Sept 10, 1932 - Mar 31, 1933	68		.77		.81	
1933		.68		.77		.81	
Bituminous Coal Code							
1933	Oct 2, 1933 - Mar 31, 1934	68		.77		.81	
Amendment 1							
1934	Apr 1, 1934 - Mar 31, 1935	75		.87		91	
1935	Oct 1, 1935 - Mar 31, 1937	87		96		1.00	

INDIANA (BRAZIL BLOCK)

Year	Period of Wage Agreement	Screened Block Basic Rate	Screened Block 2'10" and under 3'1"	Screened Block Under 2'10"
1898	Apr 1, 1898 - Mar 31, 1899	76	81	86
1899	Apr 1, 1899 - Mar 31, 1900	.76	81	86
1900	Apr 1, 1900 - Mar 31, 1901	90	.95	1.00
1901	Apr 1, 1901 - Mar 31, 1902	90	95	1.00
1902	Apr 1, 1902 - Mar 31, 1903	90	95	1.00
1903	Apr 1, 1903 - Mar 31, 1904	1.00	1.05	1.10
1904	Apr 1, 1904 - Mar 31, 1906	95	1.00	1.05
1906	Apr 1, 1906 - Mar 31, 1908	1.00	1.05	1.10
1908	Apr 1, 1908 - Mar 31, 1910	1.00	1.05	1.10
1910	Apr 1, 1910 - Mar 31, 1912	1.05	1.10	1.15
1912	Apr 1, 1912 - Apr 1, 1914	1.10	1.15	1.20
1914	Apr 1, 1914 - Apr 1, 1916	1.10	1.15	1.20
1916	Apr 1, 1916 - Apr 1, 1918	1.15	1.20	1.25
1917	Apr 16, 1917 - Mar 31, 1918	1.275	1.325	1.375
1917	Nov. 1, 1917 - for war period & not to exceed 2 yrs from Apr 1, 1918	1.40	1.45	1.50
1919	Dec. 15, 1919 - Mar 31, 1920 "Garfield Award"	1.596 e/	1.653 e/	1.71 e/
1920	Apr. 1, 1920 - Apr 1, 1922	1.70	1.75	1.80
1922	Aug 16, 1922 - Mar 31, 1923		f/	
1923	Apr 1, 1923 - Mar 31, 1924		f/	
1924	Apr 1, 1924 - Mar 31, 1927		f/	
1928	Nov 1, 1928 - Mar 31, 1930	1.60	1.65	1.70
1930			f/	
1931	—	—	f/	
1932			f/	
1933	July 1, 1933 - Mar 31, 1935	g/ .78		
Bituminous Coal Code				
1933	Oct 2, 1933 - Mar 31, 1934	.78		
Amendment 1				
1934	Apr 1, 1934 - Mar 31, 1935	.88		
1935	Oct 1, 1935 - Mar 31, 1937	i/ 97		

OHIO

Year	Period of Wage Agreement	Hocking Valley R.O.M.	Hocking Valley Screen Lump
1898	Apr 1, 1898 - Mar 31, 1899	47 1/7	66
1899	Apr 1, 1899 - Mar 31, 1900	.47 1/7	66
1900	Apr 1, 1900 - Mar 31, 1901	.57 1/7	.80
1901	Apr 1, 1901 - Mar 31, 1902	.57 1/7	.80
1902	Apr 1, 1902 - Mar 31, 1903	.57 1/7	.80
1903	Apr 1, 1903 - Mar 31, 1904	.64 2/7	.90
1904	Apr 1, 1904 - Mar 31, 1906	.60 5/7	.85
1906	Apr 1, 1906 - Mar 31, 1908	64 2/7 b/	90
1908	Apr 1, 1908 - Mar 31, 1910	64 2/7	90
1910	Apr 1, 1910 - Mar 31, 1912	6785	95
1912	Apr 1, 1912 - Mar 31, 1914	.71 3/7	1.00
1914	July 15, 1914 - Mar 31, 1916	.676 c/	h/
1916	Apr 1, 1916 - Mar 31, 1918	6764	
1917	Apr 16, 1917 - Mar 31, 1918	.7764	
1917	Nov 1, 1917 for war period and not to exceed 2 years from Apr 1, 1918	.8764	
1919	Dec 10, 1919 2/ - Mar 31, 1920 "Garfield Award"	9869 e/	
1920	Apr 1, 1920 - Mar 31, 1922	1.1164	
1922	Aug 16, 1922 - Mar 31, 1923	1.1164	
1923	Apr 1, 1923 - Mar 31, 1924	1.1164	
1924	July 16, 1924 - Mar 31, 1927	1164	
1928	Sept 1, 1928 - Mar 31, 1930 3/	.8764	
1930 – 1932	NON-UNION		
1933	June 15, 1933 - "until State Agreement made" 4/	.530	
Bituminous Coal Code			
1933	Oct 2, 1933 - Mar 31, 1934	.700	
Amendment 1			
1934	Apr 1, 1934 - Mar 31, 1935	800	
1935	Oct 1, 1935 - Mar 31, 1937	890	

WESTERN PENNSYLVANIA

Year	Period of Wage Agreement	Basic Rate Thin Vein ROM	Basic Rate Thick Vein ROM	Basic Rate Thin Vein 1 1/4 inch Screened	Basic Rate Thick Vein 1 1/4 inch Screened
1898	Apr 1, 1898 - Mar 31, 1899	4266	3413	660	.528
1899	Apr 1, 1899 - Mar. 31, 1900	4266	3413	.660	.528
1900	Apr 1, 1900 - Mar 31, 1901	5171	4318	800	.668
1901	Apr 1, 1901 - Mar 31, 1902	5171	4318	800	668
1902	Apr 1, 1902 - Mar 31, 1903	5171	4318	800	668
1903	Apr 1, 1903 - Mar. 31, 1904	5817	.4964	900	.768
1904	Apr 1, 1904 - Mar 31, 1906	5494	.4641	850	.718
1906	Apr. 1, 1906 - Mar 31, 1908	5817	.4964	.900	768
1908	Apr. 1, 1908 - Mar 31, 1910	.5817	4964	900	.768
1910	Apr 1, 1910 - Mar 31, 1912	6140	.5287	950	818
1912	Apr. 1, 1912 - Mar 31, 1914	6464	.5611	1.00	.868
1914	Apr 1, 1914 - Mar 31, 1916	6464	.5611	1.00	868
1916	Apr 1, 1916 - Mar 31, 1918	.6764	.5911		d/
1917	Apr 16, 1917 - Apr 1, 1918	7764	6911		
1917	Nov 1, 1917 - Apr. 1, 1920	8764	7911		
1919	Dec 15, 1919 - Mar 31, 1920 "Garfield Award"	9864	.9011		
1920	Apr 1, 1920 - Apr 1, 1922	1.1164	1.0311		
1922	Aug 16, 1922 - Mar 31, 1923	1.1164	1.0311		
1923	Apr 1, 1923 - Mar 31, 1924	1.1164	1.0311		
1924	Apr 1, 1924 - Mar 31, 1927	1.1164	1.0311		
1928					
1930	NON-UNION				
1931	5/				
1932	5/				
1933	5/				
		12 inches draw slate handled: Thin Vein	12 inches draw slate handled: Thick Vein	Draw slate supported by top coal: Connellsville	Draw slate supported by top coal: Thick Vein
Bituminous Coal Code					
1933	Oct 2, 1933 - Mar 31, 1934	700	.650	560	-
Amendment 1					
1934	Apr 1, 1934 - Mar. 31, 1935	800	.750	660	-
1935	Oct. 1, 1935 - Mar 31, 1937	890	840	750	.800

1/ Source: Wage Contracts of United Mine Workers of America.
2/ The strike was officially discontinued December 10, 1919. Just when the mines were opened in certain fields is not known -- probably not until December 15 or 16.
3/ This contract for a small group of operators -- Central Ohio Coal Operators Association. The rest of Ohio was operating non-union.
4/ This contract for a small group of operators in Southern Ohio.
5/ The Pittsburgh Terminal Coal Corporation had a contract with the following rates:
June 3, 1931 to June 30, 1932 $.60 per ton
July 1, 1932 to June 30, 1933 .50 " "
and extended to Code
The Creighton Fuel Company also had a contract in this period carrying a 75 cents per ton rate for pick mining

a/ Rates for District # 2, Danville, Westville, Grape Creek and associated mines in Vermillion County
b/ Strike in Ohio from April 1, 1906 to July 15, 1906 but some mines paying demands and working
c/ Fisher, W. E., and Bezanson, A., Wage Rates and Working Time in the Bituminous Coal Industry, appendix tables
d/ Screened lump not reported after 1916--all coal mined on run of mine basis.
e/ Estimated--14 per cent increase.
f/ No contracts could be located in this period. The Brazil Block District had become almost entirely a strip mining field.
g/ This reduction was due to the change from a screened to a run of mine basis of payment.
h/ Screened lump not reported after 1914--all coal mined on run of mine basis.
i/ Contract for Bonnie Brook Mines, Inc

TABLE 5

BITUMINOUS COAL INDUSTRY — ILLINOIS, INDIANA, OHIO, WESTERN PENNSYLVANIA

Tonnage Rates for Loading 1898 to 1937
(Net Tons)

Illinois

Year	Period of Wage Agreement	City of Joint Interstate Conference	Machine Mining R.O.M.
1898	Apr 1, 1898 – Mar 31, 1899	Chicago	a/
1899	Apr 1, 1899 – Mar 31, 1900	Pittsburgh	a/
1900	Apr 1, 1900 – Mar 31, 1901	Indianapolis	.39
1901	Apr 1, 1901 – Mar 31, 1902	Columbus	.39
1902	Apr 1, 1902 – Mar 31, 1903	Indianapolis	.39
1903	Apr 1, 1903 – Mar 31, 1904	Indianapolis	.45
1904	Apr 1, 1904 – Mar 31, 1906	Indianapolis	.43
1906	Apr 1, 1906 – Mar 31, 1908	[illegible]	.45
1908	Apr 1, 1908 – Mar 31, 1910	Toledo [illegible]	.46
1910	Apr 1, 1910 – Mar 31, 1912	[illegible]	.48
1912	Apr 1, 1912 – Mar 31, 1914	Indianapolis	.51
1914	Apr 1, 1914 – Mar 31, 1916	Chicago	.51
1916	Apr 1, 1916 – Mar 31, 1918	New York	.54
1917	Apr 16, 1917 – Mar 31, 1918	New York	.64
1917	Nov [illegible]	Washington	.74
1919	Dec [illegible], 1919 – Mar 31, 1920 "Garfield Award"	Garfield Award	.85 c/
1920	Apr 1, 1920 – Mar 31, 1922	New York	.98
1922	Aug 16, 1922 – Mar 31, 1923	Cleveland [illegible]	.98
1923	Apr 1, 1923 – Mar 31, 1924	New York	.98
1924	Apr 1, 1924 – Mar 31, 1927	Jacksonville	.98
1928	Sept 16, 1928 – Mar 31, 1930		.81 e/
1930			.81 e/
1931			.81 e/
1932	Aug [illegible] 1932 – Mar 31, 1933		.58 c
1933	Apr 1, 1933 – Mar 31, 1935		.58 e/
Bituminous Coal Code			
1933	Oct 2, 1933 – Mar 31, 1934		.58 c
Amendment 1			
1934	Apr 1, 1934 – Mar 31, 1935		.67 e/
1935	Oct 1, 1935 – Mar 31, 1937		.76 e

Indiana (except Brazil Block)

Year	Period of Wage Agreement	Loading: Punch Machine R.O.M.	Loading: Punch Machine [illegible]	Loading: Chain Machine R.O.M.	Loading: Chain Machine [illegible]	Machine Mining Screened
1898	Apr 1, 1898 – Mar 31, 1899	[illegible]	[illegible]	[illegible]		[illegible]
1899	Apr 1, 1899 – Mar 31, 1900	[illegible]	[illegible]	[illegible]		[illegible]
1900	Apr 1, 1900 – Mar 31, 1901	[illegible]	[illegible]	[illegible]	[illegible]	
1901	Apr 1, 1901 – Mar 31, 1902	[illegible]	[illegible]	[illegible]	[illegible]	
1902	Apr 1, 1902 – Mar 31, 1903	[illegible]	[illegible]	[illegible]	[illegible]	
1903	Apr 1, 1903 – Mar 31, 1904	[illegible]	[illegible]	[illegible]	[illegible]	
1904	Apr 1, 1904 – Mar 31, 1906	[illegible]	[illegible]	[illegible]	[illegible]	
1906	Apr 1, 1906 – Mar 31, 1908	[illegible]	[illegible]	[illegible]	[illegible]	
1908	Apr 1, 1908 – Mar 31, 1910	[illegible]	[illegible]	[illegible]	[illegible]	
1910	Apr 1, 1910 – Apr 1, 1912	[illegible]	[illegible]	[illegible]	[illegible]	
1912	Apr 1, 1912 – Mar 31, 1914	[illegible]	[illegible]	[illegible]	[illegible]	
1914	Apr 1, 1914 – Mar 31, 1916	[illegible]	[illegible]	[illegible]	[illegible]	
1916	Apr 1, 1916 – Mar 31, 1918	[illegible]	[illegible]	[illegible]	[illegible]	
1917	Apr 16, 1917 – Mar 31, 1918	[illegible]		[illegible]		
1917	Nov [illegible]	[illegible]		[illegible]		
1919	Dec [illegible], 1919 – Mar 31, 1920 "Garfield Award"	[illegible]		[illegible]		
1920	Apr 1, 1920 – Mar 31, 1922	[illegible]		[illegible]		
1922	Aug 16, 1922 – Mar 31, 1923	[illegible]		[illegible]		
1923	Apr 1, 1923 – Mar 31, 1924	[illegible]		[illegible]		
1924	Apr 1, 1924 – Mar 31, 1927	[illegible]		[illegible]		
1928	Nov [illegible], 1928 – Mar 31, 1930	[illegible]		[illegible]		
1930	Apr 1, 1930 – Mar 31, 1931	[illegible]		[illegible]		
1931	Apr 1, 1931 – Mar 31, 1932	[illegible]		[illegible]		
1932	Sept [illegible], 1932 – Mar 31, 1933	[illegible]		[illegible]		
1933		[illegible]		[illegible]		
Bituminous Coal Code						
1933	Oct 2, 1933 – Mar 31, 1934	[illegible]		[illegible]		
Amendment 1						
1934	Apr 1, 1934 – Mar 31, 1935	[illegible]		[illegible]		
1935	Oct 1, 1935 – Mar 31, 1937	[illegible]		[illegible]		

Indiana (Brazil Block)

Year	Period of Wage Agreement	Loading Screened Block
1898	Apr 1, 1898 – Mar 31, 1899	[illegible]
1899	Apr 1, 1899 – Mar 31, 1900	[illegible]
1900	Apr 1, 1900 – Mar 31, 1901	[illegible]
1901	Apr 1, 1901 – Mar 31, 1902	[illegible]
1902	Apr 1, 1902 – Mar 31, 1903	[illegible]
1903	Apr 1, 1903 – Mar 31, 1904	[illegible]
1904	Apr 1, 1904 – Mar 31, 1906	[illegible]
1906	Apr 1, 1906 – Mar 31, 1908	[illegible]
1908	Apr 1, 1908 – Mar 31, 1910	[illegible]
1910	Apr 1, 1910 – Mar 31, 1912	[illegible]
1912	June 7, 1912 – Apr 1, 1914	[illegible]
1914	June 7, 1914 – Apr 1, 1916	[illegible]
1916	Apr [illegible], 1916 – Mar 31, 1918	[illegible]
1917	Apr 16, 1917 – Mar 31, 1918	[illegible]
1917	Nov [illegible]	[illegible]
1919	Dec 16, 1919 – Mar 31, 1920 "Garfield Award"	[illegible]
1920	Apr 1, 1920 – Mar 31, 1922	1.065
1922	Aug 16, 1922 – Mar 31, 1923	a/
1923	Apr 1, 1923 – Mar 31, 1924	a/
1924	Apr 1, 1924 – Mar 31, 1927	a/
1928		a/
1930		a/
1931		a/
1932		a/
1933	July [illegible], 1933 – Mar 31, 1935	[illegible]
Bituminous Coal Code		
1933	Oct 2, 1933 – Mar 31, 1934	[illegible]
Amendment 1		
1934	Apr 1, 1934 – Mar 31, 1935	[illegible]
1935	Oct 1, 1935 – Mar 31, 1937	[illegible]

Ohio

Year	Period of Wage Agreement	Loading	Loading
1898–1935	[illegible]	[illegible]	[illegible]

NON-UNION (1930–1932)

Bituminous Coal Code; Amendment 1 — [illegible]

Western Pennsylvania

Year	Period of Wage Agreement	Loading in Rooms	Loading in Rooms
1898–1935	[illegible]	[illegible]	[illegible]

NON UNION

General Rates

[illegible]	[illegible]	[illegible]	[illegible]

Footnotes:

a/ Source: Wage contracts of United Mine Workers of America. [illegible]

[illegible]

Data not available.

Estimated — [illegible] per cent increase.

Rates for loading and timbering only.

Rates for loading, shooting and timbering [illegible]

Rates for drilling, shooting and loading.

[illegible]

Contract for [illegible]

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SECTION A.

TABLE 6

BITUMINOUS COAL INDUSTRY -- ILLINOIS, INDIANA, OHIO, WESTERN PENNSYLVANIA

Tonnage Rates for Machine Cutting[1] 1898 to 1937

(Net Tons)

Illinois

Year	Period of Wage Agreement	City of Joint Interstate Conference	Danville a/
1898	Apr 1, 1898 - Mar 31, 1899	Chicago	
1899	Apr 1, 1899 - Mar 31, 1900	Pittsburgh	Separate rates for machine cutters not available included in machine mining rate (see loading sheet)
1900	Apr 1900 - Mar 31, 1901	Indianapolis	
1901	Apr 1, 1901 - Mar 31, 1902	Columbus	
1902	Apr 1, 1902 - Mar 31, 1903	Indianapolis	
1903	Apr 1, 1903 - Mar 31, 1904	Indianapolis	
1904	Apr 1, 1904 - Mar 31, 1906	Indianapolis	
1906	Apr 1, 1906 - Mar 31, 1908	Indianapolis Individual State Agreements	
1908	Apr 1, 1908 - Mar 31, 1910	Illinois makes separate agreement	
1910	Apr 1, 1910 - Mar 31, 1912	Toledo individual state agreement	
1912	Apr 1, 1912 - Mar 31, 1914	Indianapolis	
1914	Apr 1, 1914 - Mar 31, 1916	Chicago Individual State Agreements	
1916	Apr 1, 1916 - Mar 31, 1918	New York	
1917	Apr 16, 1917 - Mar 31, 1918	New York	
1917	Nov 1, 1917 - for war period and not to exceed two years from Apr 1, 1918	Washington	
1919	Dec 10, 1919[2] - Mar 31, 1920 "Garfield award"	Garfield award	
1920	Apr 1, 1920 - Mar 31, 1922	New York	
1922	Aug 16, 1922 - Mar 31, 1923	Cleveland Individual State Agree.	
1923	Apr 1, 1923 - Mar 31, 1924	New York	
1924	Apr 1, 1924 - Mar 31, 1927	Jacksonville	
1928	Sept 16, 1928 - Mar 31, 1932		
1930			
1931			
1932	Aug 16, 1932 - Mar 31, 1933		
1933	Apr 1, 1933 - Mar 31, 1935		
Bituminous Coal Code			
1933	Oct 2, 1933 - Mar 31, 1934		
Amendment 1			
1934	Apr 1, 1934 - Mar 31, 1935		
1935	Oct 1, 1935 - Mar 31, 1937		

Indiana (except Brazil Block)* — Machine Cutting

Year	Period of Wage Agreement	Punch Machine R.O.M	Punch Machine Screened to Lump	Chain Machine R.O.M	Chain Machine Screened to Lump
1898	Apr 1, 1898 - Mar 31, 1899	See machine loading sheet under machine mining			
1899	Apr 1, 1899 - Mar 31, 1900				
1900	Apr 1, 1900 - Mar 31, 1901	.0575 / .0525	.09 / .08	.0325 / .0325	.0525 / .0525
1901	Apr 1, 1901 - Mar 31, 1902	.0575 / .0525	.09 / .08	.0325 / .0325	.0525 / .0525
1902	Apr 1, 1902 - Mar 31, 1903	[illegible]	[illegible]	.0325 / .0325	.0525 / .0525
1903	Apr 1, 1903 - Mar 31, 1904	[illegible]	[illegible]	.040 / .040	.0625 / .0625
1904	Apr 1, 1904 - Mar 31, 1906	[illegible]	[illegible]	.0394 / .0394	.0575 / .0575
1906	Apr 1, 1906 - Mar 31, 1908	[illegible]	[illegible]	.040 / .040	.0625 / .0625
1908	Apr 1, 1908 - Mar 31, 1910	[illegible]	[illegible]	.040 / .040	.0625 / .0625
1910	Aug 1, 1910 - Apr 1912	[illegible]	[illegible]	.043 / .043	.066 / .066
1912	Apr 1, 1912 - Mar 31, 1914	.075 / .070	.115 / .105	.043 / .043	.066 / .066
1914	Apr 1, 1914 - Mar 31, 1916	.075 / .070	.115 / .108	.043 / .043	.066 / .066
1916	Apr 1, 1916 - Mar 31, 1918	.079 / .074	d/	.046 / .046	d/
1917	Apr 16, 1917 - Mar 31, 1918	e/		.054 / .054 b/	
1917	Nov 1, 1917 - for war period and not to exceed two years from Apr 1, 1918	.1075 / .1005		.056 / .056	
1919	Dec 15, 1919 - Mar 31, 1920 "Garfield award"	.1326 / .1146 e/		.065 / .065 b/	
1920	Apr 1, 1920 - Mar 31, 1922	.143 / .138		.074 / .074	
1922	Aug 16, 1922 - Mar 31, 1923	.143 / .133		.074 / .074	
1923	Apr 1, 1923 - Mar 31, 1924	.143 / .133		.074 / .074	
1924	Apr 1, 1924 - Mar 31, 1927	.143 / .133		.074 / .074	
1928	Nov 1, 1928 - Mar 31, 1930	.118 / .110		.060 / .060	
1930	Apr 1, 1930 - Mar 31, 1931	.118 / .110		.060 / .060	
1931	Apr 1, 1931 - Mar 31, 1932	.118 / .110		.060 / .060	
1932	Sept 10, 1932 - Mar 31, 1935	.081 / .074		.0425 / .0425	
1933		.081 / .074		.0425 / .0425	
Bituminous Coal Code					
1933	Oct 2, 1933 - Mar 31, 1934	.081 / .074		.0425 / .0425	
Amendment 1					
1934	Apr 1, 1934 - Mar 31, 1935	Not reported		.0475 / .0475	
1935	Oct 1, 1935 - Mar 31, 1937	.80 / .105 / .097		.054 / .054	

Indiana (Brazil Block)

Year	Period of Wage Agreement	Machine Cutting — Cutters and Helpers, Screened Block
1898	Apr 1, 1898 - Mar 31, 1899	Paid by the day f/
1899	Apr 1, 1899 - Mar 31, 1900	
1900	Apr 1, 1900 - Mar 31, 1901	225
1901	Apr 1, 1901 - Mar 31, 1902	225
1902	Apr 1, 1902 - Mar 31, 1903	.225
1903	Apr 1, 1903 - Mar 31, 1904	250
1904	Apr 1, 1904 - Mar 31, 1906	2375
1906	Apr 1, 1906 - Mar 31, 1908	250
1908	Apr 1, 1908 - Mar 31, 1910	250
1910	Apr 1, 1910 - Mar 31, 1912	250
1912	June 7, 1912 - Apr 1, 1914 b/	2625
1914	June 7, 1914 - Apr 1, 1916 b/	2625
1916	Apr 4, 1916 - Mar 31, 1918 b/	2625
1917	Apr 16, 1917 - Mar 31, 1918	2975
1917	Nov 1, 1917 - for war period and not to exceed two years from Apr 1, 1918	3300
1919	Dec 15, 1919 - Mar 31, 1920 "Garfield award"	3762 e/
1920	Apr 1, 1920 - Mar 31, 1922	.3900
1922	Aug 16, 1922 - Mar 31, 1923	g/
1923	Apr 1, 1923 - Mar 31, 1924	g/
1924	Apr 1, 1924 - Mar 31, 1927	g/
1928	4/	
1930		g/
1931		g/
1932		R.O.M Punch Machine / Chain Machine
1933	July 1, 1933 - Mar 31, 1935	.091 / .084 — .0525 / .0525
Bituminous Coal Code		
1933	Oct 2, 1933 - Mar 31, 1934	.091 / .084 — .0525 / .0525
Amendment 1		
1934	Apr 1, 1934 - Mar 31, 1935	j/
1935	Oct 1, 1935 - Mar 31, 1937	.116 / .107 k/ — .064 / .064 k/

Ohio (Hocking Valley) — Machine Cutting

Year	Period of Wage Agreement	Jeffrey Mch (in rooms) R.O.M	Punch Mch (in rooms) R.O.M	Jeffrey Mch (in rooms) Screened	Punch Mch (in rooms) Screened	Breast Mch R.O.M	Short-wall Mch R.O.M	Arc-wall Mch R.O.M
1898	Apr 1, 1898 - Mar 31, 1899			.08	.125			
1899	Apr 1, 1899 - Mar 31, 1900			.08	.125			
1900	Apr 1, 1900 - Mar 31, 1901			.09	.135			
1901	Apr 1, 1901 - Mar 31, 1902	Not		.09	.135			
1902	Apr 1, 1902 - Mar 31, 1903	reported		.09	.135			
1903	Apr 1, 1903 - Mar 31, 1904			.10	.145			
1904	Apr 1, 1904 - Mar 31, 1906			.09	.140			
1906	Apr 1, 1906 - Mar 31, 1908			.0965 h/	.145 h/			
1908	Apr 1, 1908 - Mar 31, 1910			.0965	.145			
1910	Apr 1, 1910 - Mar 31, 1912			.103	.150			
1912	Apr 1, 1912 - Mar 31, 1914			.105	.1544			
1914	July 15, 1914 - Mar 31, 1916	.07	.1044	i/				
1916	Apr 1, 1916 - Mar 31, 1918	.074	.1084					
1917	Apr 16, 1917 - Mar 31, 1918	.089	j/					
1917	Nov 1, 1917 - for war period and not to exceed two years from Apr 1, 1918	.104	.1384					
1919	Dec 10, 1919[2] - Mar 31, 1920 "Garfield award"	.120	.1578 e/					
1920	Apr 1, 1920 - Mar 31, 1922	.140	.1744					
1922	Aug 15, 1922 - Mar 31, 1923	.140	.1744					
1923	Apr 1, 1923 - Mar 31, 1924	.140	.1744					
1924	July 16, 1924 - Mar 31, 1927	.140	.1744					
1928	Sept 1, 1928 - Mar 31, 1930 5/					.10	.085	.070
1930						.10	.085	.070
1931		Non-union						
1932								
1933	June 15, 1933 until state agreement made 6/					.070	.060	.050
Bituminous Coal Code								
1933	Oct 2, 1933 - Mar 31, 1934					.090	.080	.065
Amendment 1								
1934	Apr 1, 1934 - Mar 31, 1935					.100	.090	.075
1935	Oct 1, 1935 - Mar 31, 1937					.110	.100	.083

Western Pennsylvania — Undercutting in Rooms

Year	Period of Wage Agreement	Harrison, Ingersoll or Sullivan Machines Thin R.O.M	Harrison, Ingersoll or Sullivan Machines Thick R.O.M	Jeffrey-Link Belt & other Chain Machines Thin R.O.M	Jeffrey-Link Belt & other Chain Machines Thick R.O.M	Harrison, Ingersoll or Sullivan Machines Thin 1¼ inch Screened	Harrison, Ingersoll or Sullivan Machines Thick 1¼ inch Screened	Jeffrey-Link Belt & other Chain Machines Thin 1¼ inch Screened	Jeffrey-Link Belt & other Chain Machines Thick 1¼ inch Screened
1898	Apr 1, 1898 - Mar 31, 1899	.0807	.0645	.0517	.0418	.125	.100	.080	.064
1899	Apr 1, 1899 - Mar 31, 1900	.0807	.0646	.0517	.0418	.125	.100	.080	.064
1900	Apr 1, 1900 - Mar 31, 1901	.0757	.0743	.0614	.0478	.150	.115	.095	.074
1901	Apr 1, 1901 - Mar 31, 1902	.0957	.0743	.0614	.0478	.150	.115	.095	.074
1902	Apr 1, 1902 - Mar 31, 1903	.0757	.0743	.0614	.0478	.150	.115	.095	.074
1903	Apr 1, 1903 - Mar 31, 1904	.1104	.0867	.0711	.0565	.1708	.1342	.110	.0875
1904	Apr 1, 1904 - Mar 31, 1906	.1031	.0805	.0662	.0521	.1604	.1246	.1025	.0807
1906	Apr 1, 1906 - Mar 31, 1908	.1104	.0867	.0711	.0565	.1708	.1342	.110	.0875
1908	Apr 1, 1908 - Mar 31, 1910	.1104	.0867	.0711	.0565	.1708	.1342	.110	.0875
1910	Apr 1, 1910 - Mar 31, 1912	.1171	.0934	.0758	.0612	.1812	.1446	.1172	.0947
1912	Apr 1, 1912 - Mar 31, 1914	.1239	.1002	.0805	.0659	.1916	.1550	.1244	.1019
1914	Apr 1, 1914 - Mar 31, 1916	.1239	.1002	.0806	.0659	.1916	.1550	.1244	.1019
1916	Apr 1, 1916 - Apr 1, 1918	.1379	.1133	.0900	.0750		d/		
1917	Apr 16, 1917 - Apr 1, 1918	.1642	.1378	.1080	.0919				
1917	Nov 1, 1917 - Apr 1, 1920	.1900	.1621	.1260	.1098				
1919	Dec 15, 1919 - Mar 31, 1920	.2186	.1889	.1458	.1274				
1920	Apr 1, 1920 - Apr 1, 1922	.2525	.2205	.1692	.1494				
1922	Aug 15, 1922 - Mar 31, 1923	.2525	.2205	.1692	.1494				
1923	Apr 1, 1923 - Mar 31, 1924	.2525	.2205	.1692	.1494				
1924	Apr 1, 1924 - Apr 1, 1927	.2525	.2205	.1692	.1494				
1928									
1930		Non-union							
1931	7/								
1932	7/								
1933	7/								

Western Pennsylvania — Bituminous Coal Code (Short wall undercutting; Track mounted machine)

Year	Period of Wage Agreement	Short Wall Undercutting Thick	Short Wall Undercutting Thin	Short Wall Undercutting Connellsville	Cutting Thick	Cutting Thin	Cutting Connellsville	Cutting & Shearing Thick	Cutting & Shearing Thin	Cutting & Shearing Connellsville	Cutting & Drilling Thick	Cutting & Drilling Thin	Cutting & Drilling Connellsville	Cutting, Shearing & Drilling Thick	Cutting, Shearing & Drilling Thin	Cutting, Shearing & Drilling Connellsville
1933	Oct 2, 1933 - Mar 31, 1934	.07	.08	.06	.048	.058	j/	.050	.060	j/	.050	.060	j/	.052	.062	j/
Amendment 1																
1934	Apr 1, 1934 - Mar 31, 1935	.08	.09	.07	.058	.068	.058	.067	.077	.067	.066	.076	.066	.075	.085	.075
1935	Oct 1, 1935 - Mar 31, 1937	.09	.10	.08	.065	.075	.065	.075	.085	.075	.074	.084	.074	.084	.094	.084

* Note: These rates are for the machine cutter and the helper, example .0575 Machine cutter / .0525 Machine helper

1/ Source Wage contracts of United Mine Workers of America

2/ The strike was officially discontinued December 10, 1919. Just when the mines were opened in certain fields is not known — probably not until December 15 or 16.

3/ These dates differ from those on the pick mining sheet as the machine mining scale came under a separate contract with the Machine Operators of the Block Coal District

4/ No record could be found of a machine operator's contract for the period 1928 to 1930

5/ This contract for a small group of operators -- Central Ohio Coal Operators Association. The rest of Ohio was operating non-union

6/ This contract for a small group of operators in Southern Ohio.

7/ The Pittsburgh Terminal Coal Corporation had a contract with the following rates:
June 23, 1931 to June 30, 1932 .08 per ton
July 1, 1932 to June 30, 1933 .065 per ton
July 1, 1933 to Code .065 " "
The Creighton Fuel Company also had a contract during this period but no rate was reported for machine cutting.

a/ Rates for District # 2, Danville, Westville, Grape Creek, and associated mines in Vermillion County.

b/ Vandalia track and north thereof

c/ South of Vandalia track

d/ Screened lump not reported after 1916 — all coal mined on run of mine basis

e/ Estimates — 14 per cent increase

f/ Rate for Brazil Block Coal Company, 19 cents per ton

g/ No contracts could be located in this period. The Brazil Block District in Indiana was almost entirely a strip mining field

h/ Strike in Ohio from April 1, 1906 to July 15, 1906 but some mines paying demands and working.

i/ Screened lump not reported after 1914 — all coal mined on run of mine basis

j/ Data not available

k/ Fisher, W. E., and Bezanson, A., Wage Rates and Working Time in the Bituminous Coal Industry, appendix tables

l/ Contract for Bonnie Brook Mines, Inc.

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TABLE 7

SECTION A

BITUMINOUS COAL INDUSTRY -- ARKANSAS, OKLAHOMA, MISSOURI, KANSAS

Hourly and Daily Wage Rates for Trackmen 1/ 1912 to 1937

ARKANSAS					OKLAHOMA				MISSOURI				KANSAS			
Hours Worked per day	Year	Period of Wage Agreement	hourly rate	daily rate	Year	Period of Wage Agreement	hourly rate	daily rate	Year	Period of Wage Agreement	hourly rate	daily rate	Year	Period of Wage Agreement	hourly rate	daily rate
8	1912	Apr. 1, 1912-July 31, 1914 2/	.355	2.84	1912	Apr. 1, 1912-July 31, 1914 2/	.355	2.84	1912	Apr 1, 1912-July 31, 1914 2/	355	2.84	1912	Apr. 1, 1912-July 31, 1914 3/	.355	2.84
8	1914	Aug 1, 1914-July 31, 1916	.355	2.84	1914	Aug 1, 1914-July 31, 1916	.355	2.84	1914	Aug. 1, 1914-July 31, 1916	.356	2.84	1914	Sept 4, 1914-July 31, 1916	.356	2.84
8	1916	Aug 1, 1916-July 31, 1918	.373	2.98	1916	Aug 1, 1916-July 31, 1918	.373	2.98	1916	Aug. 1, 1916-July 31, 1918	.373	2.98	1916	Aug. 1, 1916-July 31, 1918	.373	2.98
8	1917	May 1, 1917-July 31, 1918	.450	3.60	1917	May 1, 1917-July 31, 1918	450	3.60	1917	May 1, 1917-July 31, 1918	.450	3.60	1917	May 1, 1917-July 31, 1918	450	3.60
8	1917	Nov. 1, 1917-Apr 1, 1919 3/	.625	5.00	1917	Nov. 1, 1917-Apr 1, 1919 3/	.625	5.00	1917	Nov. 1, 1917-July 31, 1920	625	5 00	1917	Nov. 1, 1917-July 31, 1920	.625	5.00
8	1919	Dec. 16, 1919-Mar. 31, 1920 "Garfield Award"	.713 4/	5.70	1919	Dec. 16, 1919-Mar. 31, 1920 "Garfield Award"	.713 4/	5.70	1919	Dec. 16, 1919-Mar 31, 1920 "Garfield Award"	.713 4/	5.70	1919	Dec. 16, 1919-Mar. 31, 1920 "Garfield Award"	.713 4/	5.70
8	1920	Apr. 1, 1920-Mar 31, 1922	.750	6.00	1920	Apr. 1, 1920-Mar. 31, 1922	.750	6.00	1920	Apr. 1, 1920-Mar. 31, 1922	.750	6.00	1920	Apr. 1, 1920-Mar. 31, 1922	.750	6.00
8	1920	Aug. 16, 1920-Mar. 31, 1922	.938	7.50	1920	Aug 16, 1920-Mar. 31, 1922	.938	7.50	1920	Aug 16, 1920-Mar. 31, 1922	.938	7.50	1920	Aug 16, 1920-Mar 31, 1922	.938	7.50
8	1922	Aug. 23, 1922-Mar. 31, 1923	.938	7.50	1922	Aug. 23, 1922-Mar. 31, 1923	.938	7.50	1922	Aug 23, 1922-Mar. 31, 1923	.938	7.50	1922	Aug 23, 1922-Mar 31, 1923	.938	7.50
8	1923	Apr 1, 1923-Mar 31, 1924	.938	7.50	1923	Apr. 1, 1923-Mar. 31, 1924	.938	7.50	1923	Apr. 1, 1923-Mar. 31, 1924	.938	7.50	1923	Apr. 1, 1923-Mar. 31, 1924	.938	7.50
8	1924	Apr. 1, 1924-Mar. 31, 1927	.938	7.50	1924	Apr. 1, 1924-Mar. 31, 1927	.938	7.50	1924	Apr. 1, 1924-Mar. 31, 1927	.938	7.50	1924	Apr. 1, 1924-Mar. 31, 1927	.938	7.50
8	1928				1928				1928	Sept. 1, 1928-Apr. 1, 1931	.625	5.00	1928	Sept. 1, 1928-Apr. 1, 1931	.638	5.10
8	1930	NON - UNION			1930	NON - UNION			1930		.625	5.00	1930		.638	5.10
8	1931				1931				1931	Apr. 1, 1931-Mar 31, 1933	.625	5.00	1931	Apr. 1, 1931-Apr. 1, 1935	.638	5.10
8	1932	Aug. 16, 1930-Mar. 31, 1933 4/	469	3.75	1932	Aug. 16, 1930-Mar. 31, 1933 4/	.469	3 75	1932	June 6, 1932-Apr. 1, 1933 5/	.469	3.75	1932		.638	5.10
		BITUMINOUS COAL CODE				BITUMINOUS COAL CODE			1933	Apr 1, 1933-Mar. 31, 1934 5/	.469	3.75	1933	May 1, 1933-Apr. 1, 1935	.469	3.75
8	1933	Oct. 2, 1933-Mar. 31, 1934	.46 7/8	3.75	1933	Oct. 2, 1933-Mar. 31, 1934	.46 7/8	3.75		BITUMINOUS COAL CODE				BITUMINOUS COAL CODE		
		AMENDMENT 1				AMENDMENT 1			1933	Oct. 2, 1933-Mar. 31, 1934	.46 7/8 b/	3 75	1933	Oct. 2, 1933-Mar. 31, 1934	.46 7/8	3.76
7	1934	Apr. 1, 1934-Mar. 31, 1935	.65 7/10	4.60	1934	Apr. 1, 1934-Mar. 31, 1935	.65 7/10	4.60		AMENDMENT 1				AMENDMENT 1		
		AMENDMENT 2				AMENDMENT 2			1934	Apr. 1, 1934-Mar. 31, 1935	65 7/10 b/	4. 60	1934	Apr. 1, 1934-Mar. 31, 1935	.65 7/10	4.60
7	1934	Effective Apr. 1, 1934-Mar. 31, 1935	.62 1/10	4.35	1934	Effective Apr. 1, 1934-Mar. 31, 1935	.62 1/10	4.35		AMENDMENT 2				AMENDMENT 2		
		AMENDMENT 3				AMENDMENT 3			1934	Effective Apr. 1, 1934-Mar. 31, 1935	.62 1/10 b/	4 35	1934	Effective Apr. 1, 1934-Mar. 31, 1935	.62 1/10	4.35
7	1934	Effective June 11, 1934-Mar. 31, 1935	.57 1/10	4.00	1934	Effective June 11, 1934-Mar. 31, 1935	.57 1/10	4.00		AMENDMENT 3				AMENDMENT 3		
									1934	Effective June 11, 1934-Mar. 31, 1935	.57 1/10 b/	4 00	1934	Effective June 11, 1934-Mar. 31, 1935	.57 1/10	4.00
	1935	Oct. 1, 1935-Mar. 31, 1937	6429	4.50	1935	Oct. 1, 1935-Mar. 31, 1937	.6429	4.50	1935	Oct. 1, 1935-Mar. 31, 1937	.6429	4 50	1935	Oct. 1, 1935-Mar. 31, 1937	6429	4 50

1/ Source: Wage contracts of United Mine Workers of America
2/ Actual date of contract was May 29, 1912, but it was effective as of April 1, 1912
3/ Extended to April 1, 1920
4/ Contract between Superior Smokeless Coal and Mining Company, the Eureka Coal Company, the Arkansas-Oklahoma Coal Operators Association and others and the United Mine Workers of America.
5/ Contract between Ray and Clay County Operators Association and United Mine Workers of America

a/ Fisher, W. H., and Bezanson, A., Wage Rates and Working Time in the Bituminous Coal Industry, appendix tables.

b/ This was the Code rate for the Missouri field but only Ray and Clay Counties were under contract with the United Mine Workers of America.

BITUMINOUS COAL INDUSTRY—ARKANSAS, OKLAHOMA, MISSOURI, KANSAS

Hourly and Daily Wage Rates for Common Labor Outside.[1] 1912 to 1937

Hours Worked per day	ARKANSAS Year	Period of Wage Agreement	hourly rate	daily rate	OKLAHOMA Year	Period of Wage Agreement	hourly rate	daily rate	MISSOURI Year	Period of Wage Agreement	hourly rate	daily rate	KANSAS Year	Period of Wage Agreement	hourly rate	daily rate
8	1912	Apr. 1, 1912-July 31, 1914[3]	281	2.25	1912	Apr. 1, 1912-July 31, 1914[3]	281	2.25	1912	Apr 1, 1912 - July 31, 1914[2]	281	2.25	1912	Apr. 1, 1912 - July 31, 1914[3]	281	2.25
8	1914	Aug. 1, 1914-July 31, 1916	.281	2.25	1914	Aug 1, 1914 - July 31, 1916	281	2.25	1914	Aug 1, 1914 - July 31, 1916	.281	2.25	1914	Sept. 4, 1914 - July 31, 1916	.281.	2.25
8	1916	Aug. 1, 1916-July 31, 1918	.295	2.36	1916	Aug. 1, 1916 - July 31, 1918	295	2.36	1916	Aug. 1, 1916 - July 31, 1918	.295	2.36	1916	Aug. 1, 1916 - July 31, 1918	.295	2.36
8	1917	May 1, 1917-July 31, 1918	.370	2.96	1917	May 1, 1917 - July 31, 1918	.370	2.96	1917	May 1, 1917 - July 31, 1918	.370	2.96	1917	May 1, 1917 - July 31, 1918	.370	2.96
8	1917	Nov. 1, 1917-Apr. 1, 1919[3]	.545	4.36	1917	Nov. 1, 1917 - Apr. 1, 1919[3]	.545	4.36	1917	Nov. 1, 1917 - July, 31, 1920	.545	4.36	1917	Nov. 1, 1917 - July 31, 1920	.545	4.36
8	1919	Dec. 16, 1919-Mar. 31, 1920 "Garfield Award"	.62½[a]	4.97	1919	Dec. 16, 1919 - Mar. 31, 1920 "Garfield Award"	.621[a]	4.97	1919	Dec. 16, 1919 - Mar. 31, 1920 "Garfield Award"	.621[a]	4.97	1919	Dec. 16, 1919 - Mar. 31, 1920 "Garfield Award"	621[a]	4.97
6	1920	Apr 1, 1920-Mar 31, 1922	.670	5.36	1920	Apr 1, 1920 - Mar 31, 1922	670	5.36	1920	Apr. 1, 1920 - Mar. 31, 1922	.670	5.36	1920	Apr. 1, 1920 - Mar. 31, 1922	.670	5.36
8	1920	Aug 16, 1920-Mar. 31, 1922	.858	6.86	1920	Aug. 16, 1920 - Mar. 31, 1922	858	6.86	1920	Aug 16, 1920 - Mar. 31, 1922	.858	6.86	1920	Aug. 16, 1920 - Mar 31, 1922	.858	6.86
8	1922	Aug. 23, 1922-Mar. 31, 1923	.858	6.86	1922	Aug. 23, 1922 - Mar. 31, 1923	.858	6.86	1922	Aug 23, 1922 - Mar. 31, 1923	858	6.86	1922	Aug. 23, 1922 - Apr. 1, 1923	858	6.86
8	1923	Apr. 1, 1923-Mar. 31, 1924	.858	6.86	1923	Apr. 1, 1923 - Mar 31, 1924	858	6.86	1923	Apr. 1, 1923 - Mar 31, 1924	858	6.86	1923	Apr. 1, 1923 - Mar. 31, 1924	.858	6.86
8	1924	Apr 1, 1924-Mar 31, 1927	.858	6.86	1924	Apr. 1, 1924 - Mar. 31, 1927	.858	6.86	1924	Apr. 1, 1924 - Mar. 31, 1927	.858	6.86	1924	Apr. 1, 1924 - Mar. 31, 1927	.858	6.86
8	1928	NON-UNION			1928	NON-UNION			1928	Sept. 1, 1928 - Apr. 1, 1931	.545	4.36	1928	Sept. 1, 1928 - Apr. 1, 1931	.545	4.36
8	1930				1930				1930		.545	4.36	1930		.545	4.36
8	1931				1931				1931	Apr. 1, 1931 - Mar. 31, 1935	.545	4.36	1931	Apr. 1, 1931 - Apr. 1, 1935	.545	4.36
8	1932	Aug. 16, 1932-Mar. 31, 1935[4]	.389	3.11	1932	Aug. 16, 1932 - Mar. 31, 1935[4]	.389	3.11	1932	June 6, 1933 - Apr. 1, 1933[5]	.409	3.27	1932		.545	4.36
8	1933		.389	3.11	1933		.389	3.11	1933	Apr. 1, 1933 - Mar. 31, 1934[5]	409	3.27	1933	May 1, 1933 - Apr. 1, 1935	.409	3.27
		Bituminous Coal Code				Bituminous Coal Code				Bituminous Coal Code				Bituminous Coal Code		
8	1933	Oct. 2, 1933-Nov. 31, 1934	.410	3.28	1933	Oct. 2, 1933 - Mar. 31, 1934	.410	3.28	1933	Oct 2, 1933 - Mar 31, 1934	.410[b]	3.28	1933	Oct 2, 1933 - Mar 31, 1934	.410	3.28
		Amendment 1				Amendment 1				Amendment 1				Amendment 1		
7	1934	Apr 1, 1934 - Mar 31, 1935	.571	4.00	1934	Apr. 1, 1934 - Mar. 31, 1935	.571	400	1934	Apr. 1, 1934 - Mar. 31, 1935	.571[b]	4.00	1934	Apr 1, 1934 - Mar. 31, 1935	.571	4.00
		Amendment 2 Effective				Amendment 2 Effective				Amendment 2 Effective				Amendment 2 Effective		
7	1934	Apr. 1, 1934 - Mar. 31, 1935	.536	3.75	1934	Apr. 1, 1934 - Mar. 31, 1935	536	3.75	1934	Apr. 1, 1934 - Mar. 31, 1935	536[b]	3.75	1934	Apr. 1, 1934 - Mar. 31, 1935	.536	3.75
		Amendment 3 Effective				Amendment 3 Effective				Amendment 3 Effective				Amendment 3 Effective		
7	1934	June 11, 1934 - Mar. 31, 1935	504	3.53	1934	June 11, 1934 - Mar. 31, 1935	.504	3.53	1934	June 11, 1934 - Mar. 31, 1935	504[b]	3.53	1934	June 11, 1934 - Mar. 31, 1935	504	3.53
7	1935	Oct. 1, 1935 - Mar. 31, 1937	.5757	4.03	1935	Oct. 1, 1935 - Mar. 31, 1937	5757	4.03	1935	Oct. 1, 1935 - Mar. 31, 1937	.5757	4.03	1935	Oct. 1, 1935 - Mar 31, 1937	.5757	4.03

1/ Source: Wage contracts of United Mine Workers of America
2/ Actual date of contract was May 29, 1912 but it was effective as of April 1, 1912
3/ Extended to April 1, 1920
4/ Contract between Superior Smokeless Coal and Mining Company, the Eureka Coal Company, the Arkansas-Oklahoma Coal Operators Association and others and the United Mine Workers of America
5/ Contract between Ray and Clay County Operators Association and United Mine Workers of America

a/ Fisher, W. H., and Bezanson, A., Wage Rates and Working Time in the Bituminous Coal Industry, appendix tables

b/ This was the Code rate for the Missouri field but only Ray and Clay Counties were under contract with the United Mine Workers of America.

TABLE 3

BITUMINOUS COAL INDUSTRY -- ARKANSAS, OKLAHOMA, MISSOURI AND KANSAS

SECTION A

Hourly and Daily Wage Rates for Machine Cutters and Helpers, 1/ 1912 to 1937

ARKANSAS

Hours Worked per day	Year	Period of Wage Agreement	Cutters hourly rate	Cutters daily rate	Helpers hourly rate	Helpers daily rate
8	1912	Apr 1, 1912-July 31, 1914 2/	.418	3.34	.381	3.05
8	1914	Aug. 1, 1914-July 31, 1916	.418	3.34	.381	3.05
8	1916	Aug. 1, 1916-July 31, 1918	.438	3.507	.400	3.20¼
8	1917	May 1, 1917-July 31, 1918	.514 a/	4.11	.476 a/	3.80
8	1917	Nov. 1, 1917-Apr 1, 1919 3/	.689 a/	5.51	.650 a/	5.20
8	1919	Dec. 16, 1919-Mar 31, 1924 "Garfield Award"	.785 a/	6.28	.741 c/	5.93
8	1920	Apr. 1, 1920-Mar 31, 1922	.814	6.507	.775	6.20¼
8	1920	Aug. 16, 1920-Mar. 31, 1922	1.001	8.007	.963	7.70¼
8	1922	Aug. 23, 1922-Mar. 31, 1923	1.001	8.007	.963	7.70¼
8	1923	Apr. 1, 1923-Mar. 31, 1924	1.001	8.007	.963	7.70¼
8	1924	Apr. 1, 1924-Mar. 31, 1927	1.001	8.007	.963	7.70¼
1	1928	NON-UNION				
8	1930					
1	1931					
8	1932	Aug. 16, 1932-Mar. 31, 1935 4/	.533	4.26	.494	3.95
8	1933		.533	4.26	.494	3.95
		Bituminous Coal Code				
8	1933	Oct 2, 1933-Mar. 31, 1934	.533	4.26	.494	3.95
		After All Amendments				
7	1934	Apr 1, 1934-Mar. 31, 1935	.644	4.51	.600	4.20
7	1935	Oct. 1, 1935-Mar. 31, 1937	.716	5.01	.671	4.70

OKLAHOMA

Year	Period of Wage Agreement	Cutters hourly rate	Cutters daily rate	Helpers hourly rate	Helpers daily rate
1912	Apr. 1, 1912-July 31, 1914 2/	.418	3.34	.381	3.05
1914	Aug. 1, 1914-July 31, 1916	.418	3.34	.381	3.05
1916	Aug. 1, 1916-July 31, 1918	.439	3.51	.400	3.20
1917	May 1, 1917-July 31, 1918	.514 a/	4.11	.476 a/	3.80
1917	Nov. 1, 1917-Apr. 1, 1919 3/	.689 a/	5.51	.650 a/	5.20
1919	Dec. 16, 1919-Mar 31, 1920 "Garfield Award"	.785 a/	6.28	.741 c/	5.93
1920	Apr 1, 1920-Mar 31, 1922	.814	6.51	.775	6.20
1920	Aug. 16, 1920-Mar. 31, 1922	1.001	8.007	.963	7.70¼
1922	Aug. 23, 1922-Mar. 31, 1923	1.001	8.007	.963	7.70¼
1923	Apr. 1, 1923-Mar. 31, 1924	1.001	8.007	.963	7.70¼
1924	Apr. 1, 1924-Mar. 31, 1927	1.001	8.007	.963	7.70¼
1928	NON-UNION				
1930					
1931					
1932	Aug. 16, 1932-Mar. 31, 1935 4/	.533	4.26	.494	3.95
1933		.533	4.26	.494	3.95
	Bituminous Coal Code				
1933	Oct 2, 1933-Mar. 31, 1934	.533	4.26	.494	3.95
	After All Amendments				
1934	Apr. 1, 1934-Mar 31, 1935	.644	4.51	.600	4.20
1935	Oct. 1, 1935-Mar 31, 1937	.716	5.01	.671	4.70

MISSOURI

Year	Period of Wage Agreement	Cutters hourly rate	Cutters daily rate	Helpers hourly rate	Helpers daily rate
1912	Apr. 1, 1912-July 31, 1914 2/	.383	3.06	.355	2.84
1914	Aug. 1, 1914-July 31, 1916	.383	3.06	.355	2.84
1916	Aug. 1, 1916-July 31, 1918	.401	3.21	.373	2.98
1917	May 1, 1917-July 31, 1918	.476 a/	3.81	.450 a/	3.60
1917	Nov. 1, 1917-July 31, 1920	.651	5.21	.625	5.00
1919	Dec 16, 1919-Mar 31, 1920 "Garfield Award"	.742 a/	5.94	.713 c/	5.70
1920	Apr 1, 1920-Mar. 31, 1922	.776	6.21	.750	6.00
1920	Aug. 16, 1920-Mar. 31, 1922	.964	7.71	.938	7.50
1922	Aug. 23, 1922-Mar. 31, 1923	.964	7.71	.938	7.50
1923	Apr. 1, 1923-Mar. 31, 1924	.964	7.71	.938	7.50
1924	Apr. 1, 1924-Mar 31, 1927	.964	7.71	.938	7.50
1928	Sept. 1, 1928-Apr. 1931	.651	5.21	.625	5.00
1930		.651	5.21	.625	5.00
1931	Apr. 1, 1931-Mar. 31, 1935	.651	5.21	.625	5.00
1932	June 6, 1932-Apr. 1, 1933 5/	.489	3.91	.469	3.75
1933	Apr. 1, 1933-Mar. 31, 1934 5/	.489	3.91	.469	3.75
	Bituminous Coal Code				
1933	Oct 2, 1933-Mar. 31, 1934	.489	3.91	.469 b/	3.75
	After All Amendments				
1934	Apr 1, 1934-Mar. 31, 1935	.584	4.16	.571 b/	4.00
1935			e/		e/

KANSAS

Year	Period of Wage Agreement	Cutters hourly rate	Cutters daily rate	Helpers hourly rate	Helpers daily rate
1912	Apr. 1, 1912-July 31, 1914 2/	.418	3.34	.381	3.05
1914	Sept. 4, 1914-July 31, 1916	.418	3.34	.381	3.05
1916	Aug 1, 1916-July 31, 1918	.439	3.51	.400	3.20
1917	May 1, 1917-July 31, 1918	.514	4.11	.476	3.80
1917	Nov. 1, 1917-July 31, 1920	.689	5.51	.650	5.20
1919	Dec 16, 1919-Mar 31, 1920 "Garfield Award"	.785 c/	6.28	.741 c/	5.93
1920	Apr 1, 1920-Mar 31, 1922	.814	6.51	.775	6.20
1920	Aug. 16, 1920-Mar 31, 1922	1.001	8.01	.963	7.70
1922	Aug. 23, 1922-Mar. 31, 1923	1.001	8.01	.963	7.70
1923	Apr. 1, 1923-Mar 31, 1924	1.001	8.01	.963	7.70
1924	Apr. 1, 1924-Mar. 31, 1927	1.001	8.01	.963	7.70
1928	Sept. 1, 1928-Apr. 1, 1931	.689	5.51	.650	5.20
1930		689	5.51	.650	5.20
1931	Apr. 1, 1931-Apr. 1, 1935	.689	5.51	.650	5.20
1932		.689	5.51	.650	5.20
1933	May 1, 1933-Apr. 1, 1935	.516	4.13	.487	3.90
	Bituminous Coal Code				
1933	Oct 2, 1933-Mar 31, 1934	.516	4.13	.487	3.90
	After All Amendments				
1934	Apr 1, 1934-Mar. 31, 1935	.626	4.38	.593	4.15
1935	Oct. 1, 1935-Mar. 31, 1937	.697	488	.664	465

1/ Source: Wage contracts of United Mine Workers of America
2/ Actual date of contract was May 29, 1912 but it was effective as of April 1, 1912.
3/ Extended to April 1, 1920
4/ Contract between Superior Smokeless Coal and Mining Company, the Eureka Coal Company, the Arkansas-Oklahoma Coal Operators Association and others and the United Mine Workers of America
5/ Contract between Ray and Clay County Operators Association and United Mine Workers of America.

a/ Fisher, W. E., and Besanson, A., Wage Rates and Working Time in the Bituminous Coal Industry, appendix tables
b/ This rate was in effect in Ray and Clay Counties
c/ Estimated — 14 per cent increase
d/ Date not available from contracts - have used Kansas rate.
e/ Date not available

9537

593

TABLE 10

BITUMINOUS COAL INDUSTRY—ARKANSAS, OKLAHOMA, MISSOURI AND KANSAS

Tonnage Rates for Pick Miners 1/ 1912 to 1937

(Run-of-Mine — Net Tons)

ARKANSAS

Year	Period of Wage Agreement	Paris 36" and over	Paris 25" to 36"	Paris 24" to 25"	Paris 23" to 24"	Spadra	Quita Sept 1 to Mar 1	Quita Mar 1 to Aug 31	Thick Vein
1912	Apr 1, 1912 - July 31, 1914 2/	1.15 3/		2/		.91⅔	1.32	1.17	68
1914	Aug 1, 1914 - July 31, 1916	1.15	1.20	1.27½	1.40	93⅓	1.32	1.17	68
1916	Aug 1, 1916 - July 31, 1918	1.20	1.25	1.30½	1.45	.96½	1.38 1/10	1.20 7/10	.71
1917	May 1, 1917 - July 31, 1918	1.345 3/		3/		1.06⅔	1.51 7/10	1.34 6/10	81
1917	Nov 1, 1917 - Apr 1, 1919 3/	1.493 3/		3/		1.16⅔	1.678	1.513	91
1919	Dec. 16, 1919 - Mar 31, 1920 "Garfield Award"	1.643 b/		3/		1.290 b/	1.913 b/	1.724 b/	1.030 b/
1920	Apr 1, 1920 - Mar 31, 1922	1.89⅙	1.94⅙	2.0⅔	2.14⅙	1.46⅔	2.07⅗	1.91⅙	1.15
1922	Aug 29, 1922 - Apr 1, 1923	1.89⅙	1.94⅙	2.0⅔	2.14⅙	1.46⅔	2.07⅗	1.91⅙	1.15
1923	Apr 1, 1923 - Mar 31, 1924	1.89⅙	1.94⅙	2.0⅔	2.14⅙	1.46⅔	2.07⅗	1.91⅙	1.15
1924	Apr 1, 1924 - Mar 31, 1927	1.89⅙	1.94⅙	2.0⅔	2.14⅙	1.46⅔	2.07⅗	1.91⅙	1.15
		NON-UNION							
1932	Aug 16, 1932 - Mar 31, 1935		c/						
	Bituminous Coal Code					General Rate			
1933	Oct 2, 1933 - Mar 31, 1934					.72			
	Amendment *								
1934	Apr 1, 1934 - Mar 31, 1935					.80			
1935	Oct 1, 1935 - Mar 31, 1937					89			

OKLAHOMA

Year	Period of Wage Agreement	Tulsa	Henryetta	Pittsburgh Latimer	Eastern Thick Vein
1912	Apr 1, 1912 - July 31, 1914 2/	92 a/	83⅓	78	68 a/
1914	Aug 1, 1914 - July 31, 1916	92	.83⅓	78	69 a/
1916	Aug 1, 1916 - July 31, 1918	.95	86⅓	.81	71
1917	May 1, 1917 - July 31, 1918	1.06	96⅓	91	.81
1917	Nov 1, 1917 - Apr 1, 1919 3/	1.15	1.06⅓	1.01	.91
1919	Dec 16, 1919 - Mar 31, 1920 "Garfield Award"	1.259 a/	1.175 a/	1.100 a/	1.02 b/
1920	Apr 1, 1920 - Mar 31, 1922	1.39	1.30⅓	1.25	1.15
1922	Aug 23, 1922 - Apr 1, 1923	1.39	1.30⅓	1.25	1.15
1923	Apr 1, 1923 - Mar 31, 1924	1.39	1.30⅓	1.25	1.15
		NON-UNION			
1932	Aug 16, 1932 - Mar 31, 1935	c/			
	Bituminous Coal Code		General Rate		
1933	Oct 2, 1933 - Mar 31, 1934			72	
	Amendment *				
1934	Apr 1, 1934 - Mar 31, 1935			80	
1935	Oct 1, 1935 - Mar 31, 1937			89	

MISSOURI f/

Year	Period of Wage Agreement	Waverly Room and Pillar 3'6" and over	Waverly 3 to 3'6"	Higbee Field Longwall 3'6" and over	Higbee Field 3 to 3'6"	Adair and Schuyler 36" and over	Adair and Schuyler 30" to 36"	Bevier Thick Randolph and Macon Cos 3'6" and over	Bevier 3' to 3'6"	Bevier 2'6" to 3'	Marceline Linn County	Leavenworth County (Kansas)	Lafayette County Hand-Picked	Ray and Clay Counties Hand-Picked
1912	Apr. 1, 1912 - July 31, 1914 2/	76	81	93	99	78	83	73	.78	83	1.32	1.05	1.21	1.21
1914	Aug 1, 1914 - July 31, 1916	76	.81	.93	.99	.78	83	73	.78	83	1.32	1.05	1.21	1.21
1916	Aug 1, 1916 - July 31, 1918	.79	.84	.96	1.02	.81	.86	.76	.81	86	1.37	1.10	1.26	1.26
1917	May 1, 1917 - July 31, 1918	.89	.94	1.06	1.12	.91	96	.86	91	.96	1.47	1.20	1.36	1.36
1917	Nov 1, 1917 - July 31, 1920	.99	1.04	1.16	1.22	1.01	1.06	.96	1.01	1.06	1.63⅗	1.36⅗	1.52⅗	1.52⅗
1919	Dec 16, 1919 - Mar 31, 1920 "Garfield Award"	1.13 b/	1.19 b/	1.27 b/	1.33 b/	1.12 b/	1.17 b/	1.07 b/	1.12 b/	1.17 b/	1.866 b/	1.558 b/	1.71 b/	1.71 b/
1920	Apr 1, 1920 - Mar 31, 1922	1.23	1.28	1.40	1.46	1.25	1.34	1.20	1.25	1.30	2.03⅗	1.76⅗	1.92⅗	1.92⅗
1922	Aug 23, 1922 - Apr 1, 1923	1.23	1.28	1.40	1.46	1.25	1.30	1.20	1.25	1.30	2.03⅗	1.76⅗	1.92⅗	1.92⅗
1923	Apr 1, 1923 - Mar 31, 1924	1.23	1.28	1.40	1.46	1.25	1.34	1.20	1.25	1.30	2.03⅗	1.76⅗	1.92⅗	1.92⅗
1924	Apr 1, 1924 - Mar 31, 1927	1.23	1.28	1.40	1.46	1.25	1.30	1.20	1.25	1.30	2.03⅗	1.76⅗	1.92⅗	1.92⅗
1928	Sept 1, 1928 - Apr 1, 1931										1.63⅗			1.52⅗
1931	Apr 1, 1931 - Mar 31, 1935													1.52 4/5
1932	June 6, 1932 - Apr 1, 1933 4/													1.21
1933	Apr 1, 1933 - Mar 31, 1934 4/													1.21
	Bituminous Coal Code													
1933	Oct 2, 1933 - Mar 31, 1934													1.21 e/
	Amendment *													
1934	Apr 1, 1934 - Mar 31, 1935													1.29
1935		DATA NOT AVAILABLE												

KANSAS h/

Year	Period of Wage Agreement	Thick Vein Cherokee and Crawford Cos Kansas and Barton Co Missouri Basic	Top Vein	Bates and Vernon Counties (Mo) 4' and over	3'6" to 4'	3'6" and less	Osage County Osage City Hand-Picked	Scranton and Burlingame Hand-Picked
1912	Apr 1, 1912 - July 31, 1914 2/	.78	g/	.68	.73	.78	1.70	1.65
1914	Sept 1, 1914 - July 31, 1916	78	g/	68	73	78	1.70	1.65
1916	Aug 1, 1916 - July 31, 1918	81	1.48	.71	.76	81	1.75	1.70
1917	May 1, 1917 - July 31, 1918	.91	1.58	81	.86	.91	1.85	1.80
1917	Nov 1, 1917 - July 31, 1920	1.01	1.70⅗	.91	.96	1.01	2.02 b/	1.97 b/
1919	Dec 16, 1919 - Mar 31, 1920 "Garfield Award"	1.10 b/	1.991	1.08 b/	1.07 b/	1.13 b/	2.300 b/	2.250 b/
1920	Apr 1, 1920 - Mar 31, 1922	1.25	g/	1.15	1.20	1.25	2.91⅓	2.86⅔
1922	Aug 23, 1922 - Apr 1, 1923	1.25	g/	1.15	1.20	1.25	2.91⅓	2.86⅔
1923	Apr 1, 1923 - Mar 31, 1924	1.25	g/	1.15	1.20	1.25	2.91⅓	2.86⅓
1924	Apr 1, 1924 - Mar 31, 1927	1.26	g/	1.15	1.20	1.26	2.91⅓	2.86⅓
1928	Sept 1, 1928 - Apr 1, 1931	1.01	g/	.91	96	1.01		
1931	Apr 1, 1931 - Apr 1, 1935	1.08	g/	91	96	1.01		
1932		1.01	g/	91	96	1.01		
1933	May 1, 1933 - Apr 1, 1935	.80		.72	74	80		
	Bituminous Coal Code							
1933	Oct 2, 1933 - Mar 31, 1934	60						
	Amendment *							
1934	Apr 1, 1934 - Mar 31, 1935	88						
1935	Oct 1, 1935 - Mar 31, 1937	.97						

* Amendment #1 specifies there should be an increase of 10 cents per ton for pickmining and that the minimum rates for tonnage and piece work should be further increased in these districts by an amount sufficient to maintain the parity between pay for piece work and the basic minimum rates for day labor. This did not meet with the approval of the industry in the southwest and in June, 1934 an increase of 6 cents per ton for pickmining was approved.

1/ Source: Wage contracts of United Mine Workers of America
2/ Actual date of contract was May 29, 1912, but it was effective as of April 1, 1912
3/ Extended to April 1, 1920
4/ Contract between Ray and Clay County Coal Operators Association and United Mine Workers of America

a/ Fisher, W. E., and Bezanson, A. Wage Rates and Working Time in the Bituminous Coal Industry, appendix tables
b/ Estimated — 14 per cent increase. This increase is probably too high according to the data of the U. S. Coal Commission (see footnote a/) the increases in these four states ranged from 9 to 12 per cent
c/ Contract in effect during this period between the Superior Smokeless Coal and Mining Company, the Eureka Coal Company, the Arkansas-Oklahoma Coal Operators Association and others and the United Mine Workers of America. The contract does not specify any standard tonnage rates
d/ Recommended that mining price be referred to the District Joint Board for application of Bituminous Coal Commission Award.
e/ Rate for Elmira $ 1.3033 per ton.
f/ District # 1 - includes Bevier Thick and Higbee Fields
District # 2 - includes Marceline, Leavenworth and Ray and Clay.
District # 3 - includes Waverly and Lafayette
District # 4 - includes Adair and Schuyler
Note: The Leavenworth County, Kansas field is included in the Missouri field in the union contracts.
g/ Data not available
h/ Note: Bates and Vernon Counties, Missouri, and Barton County, Missouri, are included in the Kansas field in the union contracts.

TABLE 11

BITUMINOUS COAL INDUSTRY—ARKANSAS, OKLAHOMA, MISSOURI AND KANSAS

Tonnage Rates for Loading after Machines 1/ 1912 to 1937

(Run-of-Mine — Net Tons)

ARKANSAS a/

Year	Period of Wage Agreement	Paris Long Wall Scale 26" and over	Paris 25" to 26"	Paris 24" to 25"	Paris 23" to 24"	Thick Vein Chain Machine
1912	Apr 1, 1912 - July 31, 1914 2/	Not reported				.52½ b/
1914	Aug 1, 1914 - July 31, 1916	.76		h/		.52½ b/
1916	Aug 1, 1916 - July 31, 1918	.79		h/		.55
1917	May 1, 1917 - July 31, 1918	.95½ b/		h/		.63½
1917	Nov 1, 1917 - Apr 1, 1919 3/	1.00 b/		h/		.72
1919	Dec 16, 1919 - Mar 31, 1920 "Garfield Award"	1.23 b/		h/		.81½ b/
1920	Apr 1, 1920 - Mar 31, 1922	1.4727	1.61	1.5796	1.6733	.92½
1922	Aug 20, 1922 - Apr 1, 1923	1.4727	1.61	1.5796	1.6733	.92½
1923	Apr 1, 1923 - Mar 31, 1924	1.4727	1.61	1.5796	1.6733	.92½
1924	Apr 1, 1924 - Mar 31, 1927	1.4727	1.61	1.5796	1.6733	.92½
	NON-UNION					
1932	Aug 16, 1932 - Mar 31, 1935		f/			

General Rates

Year	Period of Wage Agreement	Loading in Rooms	Cutting, drilling & shooting in rooms over 8 sq ft deep	Loading in Rooms	Loading in Rooms over 8 sq ft deep
	Bituminous Coal Code				
1933	Oct 2, 1933 - Mar 31, 1934	.48	.57	.58	.61
	Amendment *				
1934	Apr 1, 1934 - Mar 31, 1935	.54½	.57½	.64½	.67½
1935	Oct 1, 1935 - Mar 31, 1937			.72	

OKLAHOMA

Year	Period of Wage Agreement	Tulsa Electric Machine Scale	Henryetta Electric and Jeffrey Machine Scale	Pittsburgh and Latimer Electric Machine Scale	Eastern Thick	Oklahoma Puncher Machine Scale
1912	Apr 1, 1912 - July 31, 1914 2/	Not	.62½ b/	.52½ b/	.50½ b/	.50
1914	Aug 1, 1914 - July 31, 1916	Reported	.62½	.52½ b/	.52½ b/	.50
1916	Aug 1, 1916 - July 31, 1918	.60	.65½	.55½ b/	.56 b/	.53
1917	May 1, 1917 - July 31, 1918	.77	.75½	.63½	.63½ b/	.61
1917	Nov 1, 1917 - Apr 1, 1919 3/	.85 b/	.83½	.72 b/	.72 b/	.71
1919	Dec 16, 1919 - Mar 31, 1920 "Garfield Award"	.93 b/	.92½ b/	.80 b/	.81½ b/	.809 b/
1920	Apr 1, 1920 - Mar 31, 1922	1.04	1.03	.91 b/	.92½ b/	.874
1922	Aug 23, 1922 - Apr 1, 1923	1.04	1.03	.91 b/	.92½ b/	.874
1923	Apr 1, 1923 - Mar 31, 1924	1.04	1.03	.91	.92½	.874
1924	Apr 1, 1924 - Mar 31, 1927	1.04	1.03	.91	.92½	.874
	NON-UNION					
1932	Aug 16, 1932 - Mar 31, 1935	f/				

General Rates

Year	Period of Wage Agreement	Loading in Rooms	Cutting, drilling & shooting in rooms over 8 sq ft deep	Loading in Rooms	Loading in Rooms over 8 sq ft deep
	Bituminous Coal Code				
1933	Oct 2, 1933 - Mar 31, 1934	.48	.61	.58	.61
	Amendment *				
1934	Apr 1, 1934 - Mar 31, 1935	.54½	.57½	.64½	.67½
1936	Oct 1, 1935 - Mar 31, 1937			.72	

MISSOURI i/

Year	Period of Wage Agreement	Waverly 3'6" and over	Waverly 3' to 3'6"	Adair Long Wall Machine Scale 39" and over	Adair 36" to 39"	Bevier, Randolph and Macon Cos. 3'6" and over	Bevier 3' to 3'6"	Marceline Linn County 20 to 21"	Marceline 22 to 23"	Leavenworth County (Kansas)	Lafayette County Thin / Ray & Clay Counties	Moberly Long Wall Mch Scale 3'6" and over	Moberly 3' to 3'6"
1912	Apr 1, 1912 - July 31, 1914 2/	.51 4/10	.54 4/10	.68 b/	.71½	.49	.52	Not reported		.63	.72¾	d/	
1914	Aug 1, 1914 - July 31, 1916	.51 4/10	.54 4/10	.68	.71½	.49	.52			.63	.72¾	d/	
1916	Aug 1, 1916 - July 31, 1918	.53 4/10	.56 4/10	.70½	.74	.513	.543			h/	.73 3/5	d/	
1917	May 1, 1917 - July 31, 1918	.611 b/	h/	.79	h/	.578 b/	.608			h/	.81⅛ b/	d/	
1917	Nov 1, 1917 - July 31, 1920	.68 8/10	.71 8/10	.88	.912	.648	.678	1.08	1.00	h/	.91½	d/	
1919	Dec 16, 1919 - Mar 31, 1920 "Garfield Award"	.78 4/10 b/	.81 8/10 b/	.969 b/	1.04 b/	.735 b/	.770 b/	1.166 b/	1.14 b/	h/	1.03½ b/	1.137 b/	1.187
1920	Apr 1, 1920 - Mar 31, 1922	.87 4/10	.90 4/10	1.085	1.12	.834	.84	1.258	1.24	1.06	1.15 3/5	1.137	1.187
1922	Aug 23, 1922 - Apr 1, 1923	.87 4/10	.90 4/10	1.085	1.12	.834	.84	1.258	1.24	1.06	1.15 3/5	1.187	1.189
1923	Apr 1, 1923 - Mar 31, 1924	.87 4/10	.90 4/10	1.085	1.12	.834	.84	1.258	1.24	1.06	1.15 3/5	1.137	1.189
1924	Apr 1, 1924 - Mar 31, 1927	.87 4/10	.90 4/10	1.085	1.12	.82	.85	1.258	1.24	1.06	1.15 3/5	1.00	1.05
1928	Sept 1, 1928 - Apr 1, 1931							1.018	1.00		.91⅓		
1931	Apr 1, 1931 - Mar 31, 1932										.91 4/5		
1932	June 6, 1932 - Apr 1, 1933 f/										.72½		
1933	Apr 1, 1933 - Mar 31, 1935 f/										72 4/5		
											Ray Co only		
	Bituminous Coal Code												
1933	Oct 2, 1933 - Mar 31, 1934										.72⅗ e/		
	Amendment *												
1934	Apr 1, 1934 - Mar 31, 1935										.78⅗ g/		
1935		CONTRACT NOT AVAILABLE											

KANSAS j/

Year	Period of Wage Agreement	Dist 14 (All Kansas) (Room and Pillar)	Cherokee & Crawford Cos Kansas & Barton Co. Missouri: Lower Vein	Top Vein Room and Pillar Work	Osage Co Kansas Thin Vein
1912	Apr 1, 1912 - July 31, 1914 2/	.419	.409 b/	Not	.80 b/
1914	Sept 1, 1914 - July 31, 1916	.419	.419 b/	Reported	.80
1916	Aug 1, 1916 - July 31, 1918		.44	.53	.83
1917	May 1, 1917 - July 31, 1918		.50	.69	.89
1917	Nov 1, 1917 - July 31, 1920		.56	.77	1.00
1919	Dec 16, 1919 - Mar 31, 1920 "Garfield Award"		.630 b/	.9[illegible] b/	1.61 b/
1920	Apr 1, 1920 - Mar 31, 1922		.711	.98	1.74
1922	Aug 23, 1922 - Apr 1, 1923		.711	.98	1.74
1923	Apr 1, 1923 - Mar 31, 1924		.711	.98	1.74
1924	Apr 1, 1924 - Mar 31, 1927	Electric Machine Rooms	.711	.98	1.74
1928	Sept 1, 1928 - Apr 1, 1931	.71		.79	
1931	Apr 1, 1931 - Apr 1, 1935	.71			
1932		.71			
1933	May 1, 1933 - Apr 1, 1935	.66			
			General Rate Cherokee and Crawford Cos Kansas and Barton Co Missouri		
	Bituminous Coal Code				
1933	Oct 2, 1933 - Mar 31, 1934		.55		
	Amendment *				
1934	Apr 1, 1934 - Mar 31, 1935		.61		
1935	Oct 1, 1935 - Mar 31, 1937		.68		

1/ Source: Wage contracts of United Mine Workers of America
2/ Actual date of contract was May 29, 1912 but it was effective as of April 1, 1912
3/ Extended to April 1, 1920
4/ Contract between Ray and Clay County Coal Operators Association and United Mine Workers of America

a/ The Spadra field had no machine mined coal
b/ Fisher, W. E., and Bezanson, A., Wage Rates and Working Time in the Bituminous Coal Industry, appendix tables
c/ Estimated — 1¢ per unit increase
d/ No coal loaded
e/ Clay County and Mosby, 87 cents per ton
f/ Contract in effect during this period between the Superior Smokeless Coal and Mining Company, the Eureka Coal Company, the Arkansas-Oklahoma Coal Operators Association and others and the United Mine Workers of America
The contract does not specify any standard tonnage rates.
g/ Clay County and Mosby, 93 cents per ton
h/ Data not available
i/ District # 1 — includes Bevier
District # 2 — includes Marceline, Leavenworth and Ray and Clay Counties
District # 3 — includes Waverly and Lafayette
District # 4 — includes Adair
j/ Note: The Leavenworth County, Kansas field is included in the Missouri field in the union contracts.

* Amendment #1 specified there should be an increase of 6 cents per ton for loading and that the minimum rates for tonnage and piece work should be further increased in these districts by an amount sufficient to maintain the parity between pay for piece work and the basic minimum rates for day labor. This did not meet with the approval of the industry in the southwest and in June, 1934 an increase of 6½ cents was approved.

SECTION A

TABLE 12

BITUMINOUS COAL INDUSTRY—ARKANSAS, OKLAHOMA, MISSOURI, KANSAS

Tonnage Rates for Machine Cutting 1/* 1912 to 1937

(Run-of-Mine — Net Tons)

ARKANSAS

Year	Period of Wage Agreement	Paris Long Wall Scale 26" and over	25" & 26"	24" & 25"	23" & 24"	Thick Vein Chain Machine
1912	Apr 1, 1912 - July 31, 1914 2/			b/		.11½ b/
1914	Aug 1, 1914 - July 31, 1916			b/		.8½ b/
1916	Aug 1, 1916 - July 31, 1918			b/		.09 {.05 .04}
1917	May 1, 1917 - July 31, 1918	.21 {[illegible]}				.10½ {.06¼ .04¼}
1919	Nov 1, 1917 - Apr 1, 1919 3/			b/		.12 {.06¼ .05¾}
1919	Dec 16, 1919 - Mar 31, 1920 "Garfield Award"			b/		.135 g/
1920	Apr 1, 1920 - Mar 31, 1922	.3189	.3316	.3450	.3783	.15½ {[illegible]}
1922	Aug 23, 1922 - Apr 1, 1923	.3189	.3316	.3450	.3783	.15½ {[illegible]}
1923	Apr 1, 1923 - Mar 31, 1924	.3189	.3316	.3450	.3783	.15½ {[illegible]}
1924	Apr 1, 1924 - Mar 31, 1927	.3189	.3316	.3450	.3783	.15½ {[illegible]}
	NON-UNION					
1932	Aug 16, 1932 - Mar 31, 1935			d/		
	Bituminous Coal Code					
1933	Oct 2, 1933 - Mar 31, 1934			b/		
	Amendment *	General Rates				
1934	Apr. 1, 1934 - Mar 31, 1935				.125	
1935	Oct 1, 1935 - Mar 31, 1937				.140	

OKLAHOMA

Year	Period of Wage Agreement	Tulsa Electric Machine	Henryetta Electric Machine	Henryetta Jeffrey Machine	Pittsburgh and Latimer Electric Machine	Eastern Thick Vein	Oklahoma Punch Machine
1912	Apr 1, 1912 - July 31, 1914 2/	b/	b/	g/ .20½ {[illegible]}	g/ .11½ {[illegible]}	.185 g/	.17 {[illegible]}
1914	Aug 1, 1914 - July 31, 1916	b/	.18 {[illegible]}	.20½ {[illegible]}	g/ .11½ {[illegible]}	.185 g/	.17 {[illegible]}
1916	Aug 1, 1916 - July 31, 1918	.19 {[illegible]}	.18 {[illegible]}	.20½ {[illegible]}	g/ .11½ {[illegible]}	g/ .09 {[illegible]}	.17 {[illegible]}
1917	May 1, 1917 - July 31, 1918	.21 {[illegible]}	.20 {[illegible]}	.22½ {[illegible]}	g/ .14	g/ .14½ {[illegible]}	.19½ {[illegible]}
1917	Nov 1, 1917 - Apr 1, 1919 3/	g/ .23 {[illegible]}	.20 {[illegible]}	.22½ {[illegible]}	g/ .15 {[illegible]}	g/ .13 {[illegible]}	.20½ {[illegible]}
1919	Dec 16, 1919 - Mar 31, 1920 "Garfield Award"	g/ .26	g/ .22½ {[illegible]}	g/ .24½ {[illegible]}	g/ .17	.155 g/	.2337 g/
1920	Apr 1, 1920 - Mar 31, 1922	.28 {.14 .14}	.24½ {[illegible]}	.27½ {[illegible]}	g/ .20 {[illegible]}	g/ .15½ {[illegible]}	.266 {.136 .13}
1922	Aug 23, 1922 - Apr 1, 1923	.28 {.14 .14}	.24½ {[illegible]}	.27½ {[illegible]}	g/ .20 {[illegible]}	g/ .15½ {[illegible]}	.266 {.136 .13}
1923	Apr 1, 1923 - Mar 31, 1924	.28 {.14 .14}	.24½ {[illegible]}	.27½ {[illegible]}	.20 {[illegible]}	.155 {[illegible]}	.266 {.136 .13}
1924	April 1, 1924 - Mar 31, 1927	.28 {.14 .14}	.24½ {[illegible]}	Not Reported	.20 {[illegible]}	.15½ {[illegible]}	.266 {.136 .13}
	NON-UNION						
1932	Aug 16, 1932 - Mar 31, 1935		d/				
	Bituminous Coal Code						
1933	Oct 2, 1933 - Mar 31, 1934		b/				
	Amendment *		General Rates				
1934	Apr 1, 1934 - Mar 31, 1935		.125				
1935	Oct 1, 1935 - Mar 31, 1937		.140				

MISSOURI 1/

Year	Period of Wage Agreement	Waverly Standard ROM	Waverly 3' to 3'6"	Adair Long Wall Scale h/	Adair Shortwall Scale 36" and over	Adair Shortwall Scale 30" to 36"	Bevier & Higbee Fields (Randolph and Macon Cos) Machine Mining Scale Standard ROM 3'6" & over	3' to 3'6"	Lafayette	Ray and Clay Cos	Moberly
1912	Apr 1, 1912 - July 31, 1914 2/	Not reported		.10 e/			.19 {[illegible]}	.16 {[illegible]}			b/
1914	Aug 1, 1914 - July 31, 1916	.16 {[illegible]}	.16 {[illegible]}	.10	Not		.14 {[illegible]}	.16 {[illegible]}	Paid		b/
1916	Aug 1, 1916 - July 31, 1918	.156 {[illegible]}	.176 {[illegible]}	.10½	Reported		.147 {[illegible]}	.167 {[illegible]}	Daily		b/
1917	May 1, 1917 - July 31, 1918	.179 {[illegible]}	b/	.12			.182 g/	b/	Rates		b/
1917	Nov 1, 1917 - July 31, 1920	.202 {[illegible]}	.222 {[illegible]}	.133			.215 {[illegible]}	.236 {[illegible]}			b/
1919	Dec 16, 1919 - Mar 31, 1920 "Garfield Award"	.230 g/	.253 g/	g/ .151			.235 g/	.268 g/			.0824 g/
1920	Apr 1, 1920 - Mar 31, 1922	.256 {[illegible]}	.276 {[illegible]}	.165	.20 {[illegible]}	.21 {[illegible]}	.266 {[illegible]}	.286 {[illegible]}			.0824 g/
1922	Aug 23, 1922 - Apr 1, 1923	.256 {[illegible]}	.276 {[illegible]}	.165	.20 {[illegible]}	.21 {[illegible]}	.266 {[illegible]}	.286 {[illegible]}			.0824 g/
1923	Apr 1, 1923 - Mar 31, 1924	.256 {[illegible]}	.276 {[illegible]}	.165	.20 {[illegible]}	.21 {[illegible]}	.266 {[illegible]}	.286 {[illegible]}			.0824 g/
1924	Apr 1, 1924 - Mar 31, 1927	.256 {[illegible]}	.276 {[illegible]}	.165	.20 {[illegible]}	.21 {[illegible]}	.200	.220			
1928	Sept 1, 1928 - Apr 1, 1931									Paid daily rate	
1931	Apr 1, 1931 - Mar 31, 1932									Paid daily rate	
1932	June 6, 1932 - Apr 1, 1933 c/									Paid daily rate	
1933	Apr 1, 1933 - Mar 31, 1934 c/									Paid daily rate	
	Bituminous Coal Code										
1933	Oct 2, 1933 - Mar 31, 1934									.210 i/	
	Amendment										
1934	Apr 1, 1934 - Mar 31, 1935									.230 i/	
1935	Contract	Not	Available								

KANSAS k/

Year	Period of Wage Agreement	Dist 14 (All Kansas)	Thick Vein Cherokee & Crawford Ks and Barton County, Mo. Lower Vein	Top Vein (Room & Pillar)	Osage County
1912	Apr 1, 1912 - July 31, 1914	.241 {.126 .115}	.241 {.126 .115}	b/	
1914	Aug 1, 1914 - July 31, 1916	.241 {.126 .115}	g/ .241 {.126 .115}	b/	Paid
1916	Aug 1, 1916 - July 31, 1918		.250 {.13 .12}	.32 {.17 .15}	Daily
1917	May 1, 1917 - July 31, 1918		.290 {.15 .14}	.36 {.19 .17}	Rates
1917	Nov 1, 1917 - July 31, 1920		.330 {.17 .16}	[illegible]	
1919	Dec 16, 1919 - Mar 31, 1920 "Garfield Award"		.370 g/	.416 g/	
1920	Apr 1, 1920 - Mar 31, 1922		.419 {[illegible]}	.509 {[illegible]}	
1922	Aug 23, 1922 - Apr 1, 1923		.419 {[illegible]}	.509 {[illegible]}	
1923	Apr 1, 1923 - Mar 31, 1924		.419 {[illegible]}	.509 {[illegible]}	
1924	Apr 1, 1924 - Mar 31, 1927		.419 {[illegible]}	.509 {[illegible]}	
1928	Sept 1, 1928 - Apr 1, 1931	Electric Machine Cutting .200 {.105 .095}		.4466 {[illegible]}	
1931	Apr 1, 1931 - Apr 1, 1932	.200 {.105 .095}			
1932		.200 {.105 .095}			
1933	May 1, 1933 - Apr 1, 1935	.150 {.08 .07}			
	Bituminous Coal Code		General Rates Cherokee and Crawford Co. Kansas and Barton Co. Mo.		
1933	Oct 2, 1933 - Mar 31, 1934		.15 {.08 .07}		
	Amendment 1				
1934	Apr 1, 1934 - Mar 31, 1935		.16 {.08½ .07½}		
1935	Oct 1, 1935 - Mar 31, 1937		.18 {.09½ .08½}		

1/ Source: Wage contracts of United Mine Workers of America
2/ Actual date of contract was May 29, 1912 but it was effective as of April 1, 1912
3/ Extended to April 1, 1920
4/ Contract between Ray & Clay County Coal Operators Association and United Mine Workers of America
* The rates in brackets are the rates for the machine cutter and the machine helper, example .210 {.105 cutter .105 helper}

a/ Fisher, W. E., and Bezanson, A., Wage Rates and Working Time in the Bituminous Coal Industry, appendix tables
b/ Data not available
c/ Estimated — 14 per cent increase
d/ Contract in effect during this period between the Superior Smokeless Coal and Mining Company, the Eureka Coal Company, the Arkansas-Oklahoma Coal Operators Association and others, and the United Mine Workers of America. The contract does not specify any standard tonnage rates
e/ These are crew rates
f/ Crew rate — to be divided equally among crew members in accordance with footage cut.
g/ District # 1 - includes Bevier and Higbee Fields
District # 2 - includes Ray and Clay Counties
District # 3 - includes Waverly and Lafayette
District # 4 - includes Adair
h/ Note: Barton County, Missouri, is included in the Kansas field in the union contracts

* Amendment #1 specified there should be an increase of 1 cent per ton for cutting and that the minimum rates for tonnage and piece workers should be further increased in these districts by an amount sufficient to maintain the parity between pay for piece work and the basic minimum rates for day labor. This did not meet with the approval of the industry in the southwest and in June, 1934 an increase of one-half cent for cutting was approved. This one-half cent increase was only put into effect in Arkansas and Oklahoma.

9637

TABLE 15

SECTION A

BITUMINOUS COAL INDUSTRY — CENTRAL PENNSYLVANIA

Hourly and Daily Wage Rates for Trackmen and Outside Common Labor and Tonnage Rates for Pick Mining, Loading and Machine Cutting.[1] 1912 to 1924, 1933 to 1937

(Tonnage Rates — N.O.M.)

Year	Period of Wage Agreement	Hours Worked per day	Trackmen Inside		Common Labor Outside		Pick Mining		Loading (after machine)		Machine Cutting and Scraping	
			hourly rate	daily rate	hourly rate	daily rate	net tons	Gross tons	net tons	Gross tons	net tons	Gross tons
1912	Apr. 1, 1912 - Mar 31, 1914	8	.325[2]	2.60	.226[2]	1.81	.6429	.7200	.3750	.4200	+ 4 1/7 %	
1914	Apr 1, 1914 - Mar. 31, 1916	8	.325[2]	2.60	.226[2]	1.81	.6429	.7200	.3750	.4200		
1916	Apr 1, 1916 - Mar. 31, 1918	8	.341[2]	2.73	.241[2]	1.93	.6696	.7500	.3967	.4443	+ 31 % or .034	
1917	Apr. 16, 1917 - Mar 31, 1918	8	.450	3.60	.326	2.60	.8031	.8995	.4975	.5572	+5% +.0215	+.019
1917	Nov 1, 1917 - "for war period and not to exceed 2 yrs from Apr 1, 1918"	8	.625	5.00	.500	4.00	.9031	1.0115	.5785	.6479	+.0213	+.019
1919	Dec. 16, 1919[3] - Mar. 31, 1920 "Garfield Award"	8	.713[2]	5.70	.570[2]	4.56	1.0128[2]	1.1343	.6678[2]	.7479	+.0235	+.021
1920	Apr 1, 1920 - Apr. 1, 1922	8	.750	6.00	.625	5.00	1.1431	1.2803	.7729	.8656	+27% +.0511	+.0456
1920	Aug 16, 1920 - Apr 1, 1922	8	.938	7.50	.813	6.50	1.1431	1.2803	.7729	.8656		
1922	Aug 16, 1922[3] - Mar. 31, 1923	8	.938	7.50	.813	6.50	1.1431	1.2803	.7729	.8656		
1923	Apr. 1, 1923 - Mar 31, 1924	8	.938	7.50	.813	6.50	1.1481	1.2803	.7729	.8656		
1924	Apr. 1, 1924 - Mar. 31, 1927	8	.938	7.50	.813	6.50	1.1431	1.2803	.7729	.8656		
1926												
1928	NON-UNION				NON-UNION							
1930												
1932	[b]											
Bituminous Coal Code					Eastern Pennsylvania and Somerset County							
1933	Oct. 2, 1933 - Mar. 31, 1934	8	.575	4.60	.450	3.60	.7000	.7840	.5200	.5824	.0800 .0560	.0896 — Shortwall machine .0616 — Arcwall machine
Amendment 1												
1934	Apr. 1, 1934 - Mar. 31, 1935	7	.714	5.00	.571	4.00	.8000	.8960	.6000[c]	.6720	.0900 .0630	.1008 — Shortwall machine .0706 — Arcwall machine
1935	Oct. 1, 1935 - Mar. 31, 1937	7	.786	5.50	.643	4.50	.8900	.9968	.6800[d]	.7616	.1000 .0700	.1120 — Shortwall machine .0784 — Arcwall machine

1/ Source: Wage contracts of United Mine Workers of America

2/ The strike was officially discontinued December 10, 1919. Just when the mines were opened in certain fields is not known — probably not until December 15 or 16.

3/ Approximate date when agreement went into effect.

a/ Fisher, W. E., and Becanson, A., Wage Rates and Working Time in the Bituminous Coal Industry, appendix tables

b/ W. R. Piper Company, Lilly, Pennsylvania, had union contract

	Trackmen	Common Labor Outside	Pick Mining (Net Tons)	Loading	Cutting
April 1, 1932 - April 1, 1934	3.84	Not Reported	.6900	Not Reported	
Jan. 1, 1933 - April 1, 1934	3.12	2.80	.460	"	"

c/ Conveyor loading 51 cents per net ton and 5712 cents per gross ton

d/ Conveyor loading, $0.5763 per net ton and $0.6455 per gross ton

9837

5917

TABLE 14

BITUMINOUS COAL INDUSTRY -- MICHIGAN

Hourly and Daily Wage Rates for Trackmen and Outside Common Labor and Tonnage Rates for Pick Mining, Loading and Machine Cutting.[1] 1912 to 1937

(Tonnage Rates -- Net Tons)

Year	Period of Wage Agreement	Hours Worked per day	Trackmen Inside		Common Labor Outside		Pick Mining				Loading -- and Drilling (in Rooms)				Machine Cutting (in Rooms)			
											After Chain Machine		After Punch Machine		Chain Machine		Punch Machine	
			Hourly Rate	Daily Rate	Hourly Rate	Daily Rate	30" and up Screened	27" to 30" Run of Mine	24" to 27" Run of Mine	30" and up Run of Mine	Screened	Run of Mine	Screened	Run of Mine	Screened	Run of Mine	Screened	Run of Mine
1912	Apr. 1, 1912[2] - Mar. 31, 1914	8	.355	2.84	.281	2.25	1.04	1.11	1.16	.8278[3]	[3]		.62	.485[3]	.62	.485	.20	.164[3]
1914	Apr. 1, 1914 - Mar. 31, 1916	8	.355	2.84	.281	2.25	1.04	1.11	1.16	.8278[3]	[3]		.62	.485[3]	.62	.485	.20	.164[3]
1916	Apr. 1, 1916 - Mar. 31, 1918	8	.373	2.98	.295	2.36				.8421	.8804	.9187		.505		.5050		.1575
1917	Apr. 16, 1917 - Mar 31, 1918	8	.450	3.60	.370	2.96				.9421	.9804	1.0187		.605		.6050		.1625
1917	Nov. 1, 1917[3] - Mar. 31, 1920	8	.625	5.00	.545	4.36				1.0421	1.0804	1.1187		.690		.690		.1775
1918	Aug. 16, 1918 - Mar. 31, 1920[4]	8	.625	5.00	.545	4.36				1.1421	1.1804	1.2187		.775		.775		.1925
1919	Dec. 10, 1919[5] - Mar. 31, 1920 "Garfield Award"	8	.713	5.70	.621	4.97				1.2879	1.3316	1.3753		.872		.872		.2173
1920	April 1, 1920 - Mar. 31, 1922	8	.781	6.25	.670	5.36				1.3821	1.4204	1.4587		.985		.985		.2225
1920	Aug. 16, 1920 - Mar. 31, 1922	8	.969	7.75	.858	6.86				1.3821	1.4204	1.4587		.985		.985		.2225
1922	Aug. 14, 1922 - Mar. 31, 1923	8	.969	7.75	.858	6.86				1.3821	1.4204	1.4587		.985		.985		.2225
1923	Apr. 1, 1923 - Mar. 31, 1924	8	.969	7.75	.858	6.86				1.3821	1.4204	1.4587		.985		.985		.2225
1924	Apr. 1, 1924 - Mar. 31, 1927	8	.969	7.75	.858	6.86				1.3821	1.4204	1.4587		.985		.985		.2225
1927	Apr. 1, 1927 - Mar. 31, 1927 and extended to Nov. 15, 1928	8	.969	7.75	.858	6.86				1.3821	1.4204	1.4587		.985		.985		.2225
1928	Nov. 16, 1928 - Mar. 31, 1930	8	.765	6.12	.678	5.42				1.1746	1.2129	1.2512		.830[5]		NOT REPORTED		.1700[5]
1930	Apr. 1, 1930 - Mar. 31, 1931	8	.765	6.12	.678	5.42				1.1746	1.2129	1.2512		.830[5]				.1700[5]
												GENERAL RATE						GENERAL RATE
1931	Sept. 1931 - Mar. 31, 1932	8	.646	5.17	.573	4.58				.9914	1.0297	1.0880		.75[5]				.1435[5]
1932	April, 1932 - Mar. 31, 1933	8	.646	5.17	.573	4.58				.9914	1.0297	1.0880		.75[5]				.1435[5]
Bituminous Coal Code																		
1933	Oct. 2, 1933 - Mar. 31, 1934	8	.576	4.77	.523	4.18				.9120	.9503	.9886		.6900[5]				.1920[5]
Amendment																		
1934	Apr. 1, 1934 - Mar. 31, 1935	7	.739	5.17	.654	4.58				1.012	1.0503	1.089		.7700[5]				.1420[5]
1935	Oct. 1, 1935 - Mar. 31, 1937	7	.810	5.67	.726	5.08				1.102				.851[5]				.151[5]

1/ Source: Wage contracts of United Mine Workers of America.
2/ Contract dated May 25, 1912, effective as of April 1, 1912.
3/ Contract dated November 23, 1917, effective as of November 1, 1917.
4/ Increase for tonnage men only.
5/ The strike was officially discontinued December 10, 1919. Just when the mines were opened in certain fields is not known -- probably not until December 15 or 16.

a/ Fisher, W. E., and Sezanson, A., Wage Rates and Working Time in the Bituminous Coal Industry, appendix tables.
b/ Data not available.
c/ Loading coal, 24 to 30 inches $.8573
d/ Cutting, chain machine, to 30 inches $.1762
e/ For coal 30 inches

The Michigan contract was not available but the increases as set forth in the Appalachian agreement have been added.

TABLE 15

BITUMINOUS COAL INDUSTRY — NORTHERN WEST VIRGINIA

SECTION A

Hourly and Daily Wage Rates for Trackmen and Outside Common Labor and Tonnage Rates for Pick Mining, Loading and Machine Cutting 1/ 1912 to 1937

(Tonnage Rates — 2,000 Net Tons)

Year	Period of Wage Agreement	Hours Worked per Day	Trackmen Inside, All Districts: Hourly Rate	Trackmen Inside, All Districts: Daily Rate	Common Labor Outside, All Districts: Hourly Rate	Common Labor Outside, All Districts: Daily Rate
1912						
1914	NON-UNION					
1916						
1918	Sept 16 1918 - Mar 31 1920 2/	8	.565	4.52	.500 a/	4.00
1919	Dec 10, 1919 3/ - Mar 31, 1920 "Garfield award"	8	.566 a/	5.18	.506 a/	4.06
1920	April 1 1920 - Mar 31, 1922 4/	8	.720	5.76	.630 a/	5.04
*1920	Aug 16, 1920 - Mar 31, 1922 4/	8	.908	7.26	.819 a/	6.55
*1922	Aug 15, 1922 - Mar 31, 1923 5/	8	.908	7.26	.819 a/	6.55
*1923	April 1923 - Mar 31, 1924	8	.908	7.26	.819 a/	6.56
1924	April 1, 1924 - Mar 31, 1927 6/	8	.908	7.26	.819 a/	6.56
1931	7/					
1932	8/					
1933	9/					
Bituminous Coal Code						
1933	Oct 2, 1933 - Mar 31, 1934	8	.545	4.36	.420	3.36
Amendment 1						
1934	Apr 1, 1934 - Mar 31, 1935	7	.714	5.00	.571	4.00
Amendment 2 10/						
1934	Nov 22, 1934 - Mar 31, 1935	7	.714	5.00	.571	4.00
1935	Oct 1, 1935 - Mar 31, 1937	7	.786	5.50	.643	4.50

Pickmining — Room and Pillar

Year	Period	Pittsburgh Vein: Open Lights	Pittsburgh Vein: Closed Lights	Sewickley Vein, 5 ft & over: Open Lights	Sewickley Vein, 5 ft & over: Closed Lights	Sewickley Vein, Under 5 ft: Open Lights	Sewickley Vein, Under 5 ft: Closed Lights
1918	Sept 16 1918 - Mar 31 1920	.616	.650	.636	.650	.710	.724
1919	Dec 10, 1919 - Mar 31, 1920	.725 e/	.741 e/	.725 e/	.741 e/	.809 e/	.825 e/
	General Rate for No. West Va.						
1920	April 1 1920 - Mar 31, 1922			.876	.890	.950	.964
*1920	Aug 16, 1920 - Mar 31, 1922			.876	.890	.950	.964
*1922	Aug 15, 1922 - Mar 31, 1923			.876	.890	.950	.964
*1923	April 1923 - Mar 31, 1924			.876	.890	.950	.964
				4 ft & over		Under 4 ft	
1924	April 1, 1924 - Mar 31, 1927			.876	f/	.950	f/
	General Rate						
1933	Oct 2, 1933 - Mar 31, 1934			.560 c/			
1934	Apr 1, 1934 - Mar 31, 1935			g/			
1934	Nov 22, 1934 - Mar 31, 1935			.660 a/			
1935	Oct 1, 1935 - Mar 31, 1937			.750 a/			

Loading in Rooms after Electric Chain Machines

Year	Pittsburgh Vein, Hand Drilling: Open Lights	Pittsburgh Vein, Hand Drilling: Closed Lights	Pittsburgh Vein, Machine Drilling: Open Lights	Pittsburgh Vein, Machine Drilling: Closed Lights	Sewickley 5 ft & over, Hand Drilling: Open Lights	Sewickley 5 ft & over, Hand Drilling: Closed Lights	Sewickley 5 ft & over, Machine Drilling: Open Lights	Sewickley 5 ft & over, Machine Drilling: Closed Lights	Sewickley Under 5 ft, Hand Drilling: Open Lights	Sewickley Under 5 ft, Hand Drilling: Closed Lights	Sewickley Under 5 ft, Machine Drilling: Open Lights	Sewickley Under 5 ft, Machine Drilling: Closed Lights
1918	.432 c/	.445 c/	.402 c/	.415 c/	.432 c/	.445 c/	.412 c/	.426 c/	.505 c/	.518 c/	.465 c/	.478 c/
1919	.492 c/	.507 c/	.470 c/	.485 c/	.492 c/	.507 c/	.470 c/	.485 c/	.576 c/	.591 c/	.553 c/	.568 c/
					General Rate for No. West Va.							
1920					.627	.640	.607	.620	.700	.713	.680	.693
*1920					.627	.640	.607	.620	.700	.713	.680	.693
*1922					.627	.640	.607	.620	.700	.713	.680	.693
*1923					.627	.640	.607	.620	.700	.713	.680	.693
					4 feet and over				Under 4 feet			
1924					.627	f/	.607	f/	.700	f/	.688	f/

Loading in Rooms after Arcwall or Track Mounted Mch. — Northern West Virginia

Year	Machine Mined without Drill. — Bottom Cutting: 4 ft & over	Machine Mined without Drill. — Bottom Cutting: Under 4 ft	Machine Mined with Drilling — Bottom Cutting: 4 ft & over	Machine Mined with Drilling — Bottom Cutting: Under 4 ft	Machine Mined with Hand Drill. — Top Cutting: 4 ft & over	Machine Mined with Hand Drill. — Top Cutting: Under 4 ft
1924	.627	.700	.607	.680	.627	.710

General Rates — Loading

Year	Sewell Vein (Webster, Randolph and Nicholas Cos)	Northern West Virginia: No Drilling	Northern West Virginia: Drilled	Northern West Virginia: Drilled and Sheared	Northern West Virginia: Sheared
1933	Not reported	.400	.38	.386	.356
1934 (Apr 1)		g/	g/	g/	g/
1934 (Nov 22)	.522	.505	.475	.430	.460
1935	.602	.585	.556	.510	.540

Cutting in Rooms with Electric Chain Machines

Year	Pittsburgh Vein, Without Drilling: Open Lights	Pittsburgh Vein, Without Drilling: Closed Lights	Pittsburgh Vein, Machine Drilling: Open Lights	Pittsburgh Vein, Machine Drilling: Closed Lights	Sewickley 5 feet and over, Without Drilling: Open Lights	Sewickley 5 feet and over, Without Drilling: Closed Lights	Sewickley 5 feet and over, Machine Drilling: Open Lights	Sewickley 5 feet and over, Machine Drilling: Closed Lights	Sewickley Under 5 feet, Without Drilling: Open Lights	Sewickley Under 5 feet, Without Drilling: Closed Lights	Sewickley Under 5 feet, Machine Drilling: Open Lights	Sewickley Under 5 feet, Machine Drilling: Closed Lights
1918	.1073	.1100	.1173	.1200	.1073	.1100	.1173	.1200	.1233	.1260	.1133	.1160
1919	.1234 c/	.1264 c/	.1337 c/	.1368 c/	.1230 c/	.1258 c/	.1337 c/	.1368 c/	.1406 c/	.1436 c/	.1292 c/	.1322 c/
1920					.1528	.155	.1623	.1650	.1583	.1610	.1683	.1710
*1920					.1528	.155	.1623	.1650	.1583	.1610	.1683	.1710
*1922					.1528	.155	.1623	.1650	.1583	.1610	.1683	.1710
*1923					.1523	.155	.1623	.1650	.1583	.1610	.1683	.1710
1924					.1528	f/	.1623	f/	.1583	f/	.1683	f/

Cutting in Rooms with Arcwall or Track Mounted Machines — Northern West Virginia

Year	Machine Mined without Drill. — Bottom Cutting: 4 ft & over	Machine Mined without Drill. — Bottom Cutting: Under 4 ft	Machine Mined with Drilling — Bottom Cutting: 4 ft & over	Machine Mined with Drilling — Bottom Cutting: Under 4 ft	Machine Mined with Hand Drill. — Top Cutting: 4 ft & over	Machine Mined with Hand Drill. — Top Cutting: Under 4 ft
1924	.14725	.15725	.13725	.14225	.14725	.14725

General Rates — Cutting

Year	Sewell Vein (Webster, Randolph and Nicholas Cos): Shortwall	Sewell Vein: Arcwall	Breast Machine: Cutting	Breast Machine: Cutting and Drilling	Breast Machine: Cutting on Block System	Breast Machine: Cutting and Pick for Pick Mining	Shortwall	Track Mounted, Under Cutting: Cutting	Track Mounted, Under Cutting: Incl. Drill	Track Mounted, Under Cutting: Incl. Shear	Track Mounted, Under Cutting: Incl. Drill & Shear	Track Mounted, Top Cutting: Cutting	Track Mounted, Top Cutting: Incl. Drill	Track Mounted, Top Cutting: Incl. Shear	Track Mounted, Top Cutting: Incl. Drill & Shear
1933	Not reported		.080	.092	.075	.087	.060	.048	.055	.060	.062	.065	Not reported		
1934 (Apr 1)			g/	g/	g/	g/	g/	g/	g/	g/	g/	g/			
1934 (Nov 22)	.085	.059	.095	.107	.090	.102	.075	.056	.063	.068	.076	.052	.059	.064	.072
1935	.095	.066	.105	.117	.100	.112	.085	.063	.070	.075	.082	.059	.066	.071	.079

1/ Source: Wage contracts of United Mine Workers of America.
2/ Contract between Pittsburgh Vein Coal Operators Association, Sewickley Vein Coal Operators Association, and United Mine Workers of America.
3/ The strike was officially discontinued, December 10, 1919. Just when the mines were opened in certain fields is not known — probably not until December 15 or 16.
4/ Contract between Northern West Virginia Coal Operators Association and United Mine Workers of America.
5/ Approximate date when agreement went into effect.
6/ Contract between Northern West Virginia Coal Operators Association, Monongalia Coal Association and United Mine Workers of America.
7/ Twenty-eight companies, in the Scotts Run District, Monongalia County, signed a contract between May 28 and June 6, 1931. The contract carried the following rates:

Trackmen	$ 3.60 per day
Pick mining	.36 per ton
Loading	.30 per ton
Cutting	.05 per ton

Data were not available as to the length of time this contract was to be in effect.

8/ In 1932 some Northern West Virginia Coal Operators signed a contract with the following rates:

Trackmen	$ 2.70 per day
Outside Common Labor	2.40 " "
Pick mining	.285 per net ton
Loading	.225 per net ton
Machine Cutting	.036 " " "

9/ In the first quarter of 1933, 18 companies in Northern West Virginia were under contract, with the following rate:

Trackmen	$ 2.70 per day
Outside Common Labor	2.15 " "
Pick mining	.285 per net ton
Loading	.225 " " "
Machine Cutting	.040 " " "

10/ Amendment # 2 specified that there should be a further increase of 2½ cents in loading rates and ½ cent in cutting rates.

a/ Fisher, W. E. and Bezanson, A. Wage Rates and Working Time in the Bituminous Coal Industry, appendix tables. Rates for outside common labor were not reported in the contracts. These rates represent median hourly rates for 28 mines as reported by the Coal Commission. The same rate was used for 1922, 1923, and 1924 since the wage scale did not change in this period.
b/ In mines where closed lights are used a charge of 5 cents per shift per lamp shall be made.
c/ Puncher machine rates to be 5 cents above chain machine rates.
d/ Pillar work, 46 cents per ton.
e/ Same rate for Sewell Vein.
f/ Estimated — 14 per cent increase.
g/ Amendment # 1 specified — "on the basis of the 2,000 pound ton, there shall be an increase of 10 cents per ton for pick mining, 8 cents per ton for machine mining (loading), and an increase of 1 cent per ton for cutting" and "in addition to these increases minimum rates for tonnage and other piecework shall be further increased by an amount sufficient to maintain the parity between pay for such tonnage and piecework and the basic minimum rate for day labor."

* NOTE: No contracts could be located in this period and as the contract rates did not change in these years it was safe to fill in the missing data. However, it should be noted that the 1924 to 1927 contract for the tonnage occupations reported the seam thickness as 4 feet and over and under 4 feet whereas the 1920 contract reported 5 feet and over and under 5 feet. This change may have applied also to those years for which the tonnage rates are missing. The same thing is also true for "closed lights" rate.

TABLE 16

BITUMINOUS COAL INDUSTRY—KANAWHA, WEST VIRGINIA

Hourly and Daily Wage Rates for Trackmen and Outside Common Labor and Tonnage Rates for Pick Mining, Loading and Machine Cutting.[1] 1912 to 1924—1933 to 1937
(Tonnage Rates — Net Tons)

Year	Period of Wage Agreement	Hours Worked per day	Trackmen Inside		Common Labor Outside				Pick Mining										Loading -- in Rooms (after machine)					Machine Cutting -- in Rooms				
					Kanawha		Putnam Co.		Kanawha Thick Vein #1 and #2 Seams		Kanawha Thick Vein Powellton Seam		Kanawha Hard Coal #5 Seam		Coalburg Seam		Cedar Grove Seam		Kanawha Thick Vein #1 and #2 Seams	Kanawha Hard Coal #5 Seam	Coalburg Seam		Cedar Grove Seam	Kanawha Thick Vein #1 and #2 Seams	Kanawha Hard Coal #5 Seam	Coalburg Seam		Cedar Grove Seam
			hourly rate	daily rate	hourly rate	daily rate	hourly rate	daily rate	Screened	ROM	Screened	R.O.M.	Screened	R.O.M.	Screened	R.O.M.	Screened	R.O.M.	R.O.M.	R.O.M.	Screened	R.O.M.	R.O.M.	R.O.M.	R.O.M.	Screened	R.O.M.	R.O.M.
1912	Apr. 1, 1912-Mar 31, 1914	9	270	2 43	.199[a]	1.79	183[b]	1 65	[c]	490		.4625	[c]	.510	.8175[d]	.565[d]		.565	.26	27	.430	.325	325	065	.070	100	075	.0975
1914	Apr. 1, 1914-Mar. 31, 1917	9	.270	2 43	.199[a]	1.79	183[b]	165	[c]	.490		.4625	[c]	.510	.8175[d]	.565[d]		.565	.26	.27	.430	.325	325	065	070	.100	.075	.0975
1917	Apr. 1, 1917 - Dec. 31, 1918	8	355	2 84	.274[a]	2.19	.222[b]	1.78		.555		.5275	[c]	.575	.9125[d]	.630[d]		.630	315	325	510	.380	.380	075	.080	.115	085	.1075
1917	July 1, 1917 - Mar 31, 1918	8	.393	3 14	.311[a]	2.49	[b]			605		.5775	[c]	625	[h]	.680		.680	.360	.370	[h]	425	.425	.080	085	[h]	090	.1125
1917	Nov. 1, 1917 - "during continuation of war and not to exceed 2 years from Apr. 1, 1918"	8	568	454	.470[a]	376	.462[b]	3.70		.705		.6775	[c]	.725	1.130	.780		.780	.44	.45	690	505	505	.100	.105	1525	110	.1325
1919	Dec. 1, 1919 — "Garfield Award"	8	650	5 20	.500[a]	4.00	536[b]	4.21		.804[g]		.7724[g]		.8265[g]	1.288[g]	.889[g]		.889[g]	.502[g]	513[g]	.787[g]	.576[g]	.576[g]	.1147[g]	.120[g]	1739[g]	.126[g]	.1511[g]
1920	July 27, 1920-Mar 31, 1922	8	693	5 54	.626[a]	5 00	588[b]	4.70		.945		.9175	[c]	.965	1.47[e]	1.02[e]		1.02	63	64	1.010	693	.705	.140	.145	210	150	.1725
1920	Aug. 16, 1920-Mar. 31, 1922	8	.880	7 04	.813[a]	6.50	.775[b]	6.20		.945		.9175	[c]	.965	1.47[e]	1.02[e]		1.02	63	.64	1.010	.693	.705	.140	.145	210	.160	.1725
1922	Aug 15, 1922[2] - Mar 31, 1923																											
1923	Apr 1, 1923-Mar. 31, 1924	8	880	7.04						.945		.9175	[c]	.965	1.47[e]	1.02[e]		1.02	.63	.64	1.010	.693	.705	.140	.145	210	.160	1725
1924																												
1926																												
1928		Non-	Union									Non-	Union							Non-	Union				Non-	Union		
1930																												
1932																												
Bituminous Coal Code													General Rate								General Rate					General Rate		
1933	Oct 2, 1933-Mar. 31, 1934	8	.525	4.20	.400	3.20								492[f]							.422					.070 Short wall machine; .045 Track mounted		
Amendment 1																												
1934	Apr. 1, 1934 - Mar. 31, 1935	7	657	4.60	.514	3.60								682[f]							.502					.080 Short wall machine; .052 Track mounted		
1935	Oct 1, 1935 - Mar. 31, 1937	7	.729	5.10	.586	4.10								672[f]							.582					.090 Short wall machine; .059 Track mounted		

1/ Source: Wage contracts of United Mine Workers of America
2/ According to the United Mine Workers of America, Kanawha was not under union contract during this period
a/ Fisher, W. E., and Bezanson, A., Wage Rates and Working Time in the Bituminous Coal Industry, appendix tables. No rates were reported in the contracts for outside common labor. These rates represent the most representative rate as selected from the U. S. Coal Commission data
b/ Fisher, W. E., and Bezanson, A., Wage Rates and Working Time in the Bituminous Coal Industry, appendix tables. These rates are from the Coal Commission data and are for one mine only.
c/ Screened coal to be paid for on basis of percentage of screenings.
d/ Same rate for Leviston, Kanawha, Elk River and Winifred Seams. Gauly River seams to be based on Kanawha Seams that apply to them
e/ Leviston, Kanawha, and Winifred seams have same rate. Coal River and Elk River based on Kanawha seams that apply to them.
f/ Same rate for pillar work
g/ Estimated — 14 per cent increase
h/ Data not available

TABLE 17

BITUMINOUS COAL INDUSTRY — WESTERN KENTUCKY

SECTION A

Hourly and Daily Wage Rates for Trackmen and Outside Common Labor, Daily Wage Rates for Machine Cutters and Helpers and Tonnage Rates for Pick Mining Loading and Machine Cutting 1/

(Tonnage Rates -- Net Tons)

Year	Period of Wage Agreement	Hours Worked per day	Trackmen Inside: Hourly Rate	Trackmen Inside: Daily Rate	Outside Common Labor: Hourly Rate	Outside Common Labor: Daily Rate	Machine Cutters and Helpers: Chain Breast Machine: Cutter daily rate	Chain Breast Machine: Helper daily rate	Continuous Cutter or Shortwall Machine: Cutter daily rate	Continuous Cutter or Shortwall Machine: Helper daily rate	Punch Machine: Cutter daily rate	Punch Machine: Helper daily rate	Pick Mining 2/: Screened	Pick Mining 2/: R.O.M.	Loading Shifter: Chain Machine Screen	Loading Shifter: Chain Machine R.O.M.	Loading Shifter: Continuous Cutter or Shortwall Machine Screen	Loading Shifter: Continuous Cutter or Shortwall Machine R.O.M.	Loading Shifter: Punch Machine Screen	Loading Shifter: Punch Machine R.O.M.	Machine Cutting: Chain Breast Machine: Cutter Screen	Machine Cutting: Chain Breast Machine: Cutter R.O.M.	Machine Cutting: Chain Breast Machine: Helper Screen	Machine Cutting: Chain Breast Machine: Helper R.O.M.	Machine Cutting: Continuous Cutter or Shortwall Machine: Cutter Screen	Machine Cutting: Continuous Cutter or Shortwall Machine: Cutter R.O.M.	Machine Cutting: Continuous Cutter or Shortwall Machine: Helper Screen	Machine Cutting: Continuous Cutter or Shortwall Machine: Helper R.O.M.	Machine Cutting: Punch Machine: Cutter Screen	Machine Cutting: Punch Machine: Cutter R.O.M.	Machine Cutting: Punch Machine: Helper Screen	Machine Cutting: Punch Machine: Helper R.O.M.
1912	Apr. 1, 1912 - Mar 31, 1914	8	30¢	2.46	225	50	2.78	2.00			2.78	2.24	.925	.5780	.625	.3867			.625	.3867	.1687	.1037	.06 3	.0398					.1321	.0818		
1914	Apr 1, 1914 Mar 31, 1916	8	30¢	2.46	225	50	2.78	2.00			2.78	2.24	.925	.5785	.625	.3867			.625	.3867	.1687	.1037	.06 9	.0434					.1321	.0825	.0835	.0510
1916	Apr 1, 1916 Mar 31, 1918	8	30.8	2.46	225	50	2.78	2.00	2.78	2.24	2.78	2.24	.925	.5785	.625	.3867			.625	.3867	.1687	.1037	.0613	.0379	.0560	.0349	.1175	.0345	.1321	.0819	.0835	.0517
1917	May 1, 1917 - Mar 31, 1918	8	36¢	2.95	270	1.16							1.08	6.935		.3649		.1693	.5724	.3549		.0549		.0852		.0351		.0351	.1685	.1016	.1082	.2604
1917	Nov 1, 1917 - Mar 31, 1920	8	54¢	4.36	405	3.24	4.72	4.28	4.72	4.08	4.72	4.08	1.25	.7734	.7442	.4638	.7285	.4519	.6824	.4231	.1463	.0858	.0943	.0585	.0771	.0475	.0746	.0470	.1934	.1209	.1281	.0769
1918	Dec 10, 1918 - Mar 31, 1920 "Congress Award"	8	48¢	3.95	360	2.85	3.88 1/	3.68 1/	3.88 1/	3.48 1/	3.38 1/	3.65 1/	.926 1/	.5833 1/	.8142 1/	.5048 1/	.7308 1/	.5058 1/	.7779 1/	.4829 1/	.2221 1/	.0751 1/	.1075 1/	.0667 1/	.0879 1/	.0554 1/	.0871 1/	.0540 1/	.2325 1/	.1378 1/	.1669 1/	.0870 1/
1920	Apr 1, 1920 - Mar 31, 1922	8	64¢	5.54	540	4.56	5.72	5.28	5.72	5.08	5.72	5.08	1.514	1.1136	1.1614	.6301	1.0485	.6561	.9464	.5868	.1619	.0858	.1348	.0893	.1149	.0688	.1140	.0753	.2368	.1477	.1726	.1068
1920	Aug 16, 1920 - Mar 31, 1922	8	88¢	6.85	738	6.06	7.22	6.78	7.22	6.78	7.22	6.58	1.699	1.0588 1/	1.1193	.7400	1.0351	.7600	1.0037	.6368	.1558	.0966	.1383	.0858	.1143	.0708	.1133	.0703	.2385	.1727	.1748	.1090
1922	Apr 1, 1922 - Mar 31, 1925	8	88¢	6.86	738	6.06	7.22	6.78	7.22	6.78	7.22	6.58	1.699	1.0585	1.1193	.7400	1.0351	.7600	1.0037	.6368	.1558	.0966	.1383	.0858	.1143	.0708	.1133	.0703	.2385	.1727	.1758	.1090
1925	May 1, 1925 - Apr 1, 1925 2/	8	88¢	6.86	738	6.06	7.22	6.78	7.22	6.78	7.22	6.58	1.699	1.0585	1.1193	.7400	1.0351	.7600	1.0037	.6368	.1558	.0966	.1383	.0858	.1143	.0708	.1133	.0703	.2385	.1727	.1758	.1090
1926																																
1928																																
1928	NON-UNION						NON--UNION																									
1930																																
1932																																
BITUMINOUS COAL CODE 1933 Oct 2, 1933 - Mar 31, 1934		8	50¢	4.00	375	3.00									GENERAL RATE 3.60 2/						CHAIN MACHINE											
AMENDMENT 1934 Apr 1, 1934 - Mar 31, 1935		7	50¢	4.00	53½	3.75															.2305	.1348										

1935 NOT UNDER UNION CONTRACT

1/ Source Wage contracts of United Mine Workers of America
There was a one contract on Oct 1, 1919 and for 18 months from said date
Contract did not change rate structure in effect in the Nov. 1, 1917 contract.
The strike was officially discontinued Dec. 10, 1919 Just when the mines were opened in certain fields is not known-probably not until Dec 15 or 16.
Eastern Kentucky did not go on strike in 1922 "
Known as Madisonville contract--counties included are Hopkins, Webster, Union and Christian

2/ Drilling, shooting, loading and timbering after machine cutting
Rates apply to all mines that have been recognized as #9 or its equivalent
Fisher, F. K and Reasonover, A.. Wage Rates and Working Time in the Bituminous Coal Industry. Appendix tables
Estimated--14 per cent
Rate including timbering

NOTE Blanks indicate data not reported.

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TABLE 18

SECTION A

BITUMINOUS COAL INDUSTRY — IOWA

Hourly and Daily Wage Rates for Trackmen and Outside Common Labor and Daily Rates for Machine Cutters and Helpers 1/

1912 to 1937

Year	Period of Wage Agreement	Hours Worked per Day	Trackmen Inside All Dists. a/ hourly Rate	Trackmen Inside All Dists. a/ daily Rate	Common Labor Outside All Dists. a/ hourly Rate	Common Labor Outside All Dists. a/ daily Rate	Machine Cutters and Helpers Sub-Dists # 2 and 3 Cutter daily rate	Machine Cutters and Helpers Sub-Dists # 2 and 3 Helper rate	Machine Cutters and Helpers Sub-Dist. # 4 Cutter daily rate	Machine Cutters and Helpers Sub-Dist. # 4 Helper rate
1912	Apr. 1, 1912 - Mar. 31, 1914	8	.356	2.84	.265	2.12	3.26	3.00	3.25	2.84
1914	Apr. 1, 1914 - Mar. 31, 1916	8	.355	2.84	.265	2.12	3.25	3.00	3.25	2.84
1916	Apr. 1, 1916 - Mar. 31, 1918	8	.373	2.98	.279	2.23	3.41	3.15	3.41	2.98
1917	Apr. 16, 1917 - Mar. 31, 1918	8	.450	3.60	.364	2.83	4.01	3.76	4.01	3.60
1917	Nov. 1, 1917 - Apr. 1, 1920	8	.625	5.00	.529	4.23	5.41	5.15	5.41	5.00
1919	Dec. 10, 1919 2/ - Mar. 31, 1920 "Garfield Award"	8	.718 b/	5.70	.616 b/	4.93	6.17 c/	5.87 c/	6.17 c/	5.70 c/
1920	Apr. 1, 1920 - Mar. 31, 1922	8	.750	6.00	.654	5.23	6.41	6.15	6.41	6.00
1920	Aug. 16, 1920 - Mar. 31, 1922	8	.938	7.50	.841	6.73	7.91	7.65	7.91	7.50
1920	Sept. 1, 1920 - Mar. 31, 1922	8	.938	7.50	.841	6.73	7.91	7.65	7.91	7.50
1922	Aug. 15, 1922 3/ - Mar. 31, 1923	8	.938	7.50	.841	6.73	7.91	7.65	7.91	7.60
1923	Apr. 1, 1923 - Mar. 31, 1924	8	.938	7.50	.841	6.73	7.91	7.65	7.91	7.50
1924	Apr. 1, 1924 - Mar. 31, 1927	8	.938	7.50	.841	6.73	7.91	7.65	7.91	7.50
1928	Oct. 1, 1928 - Mar. 31, 1930	8	.725	5.80	.648	5.18	6.21	5.95	6.21	5.80
1930	Apr. 1, 1930 - Mar. 31, 1931		.725	5.80	.648	5.18	.621	5.95	6.21	5.80
			Iowa - Wayne and Appanoose	Iowa - Dists. # 2, 3 & 4		Iowa - Wayne and Appanoose	Iowa - Dists. # 2, 3 & 4			
1931	Apr. 1, 1931 - Mar. 31, 1933	8 (Sept. 16, 1931 Apr. 1, 1933)	.625 5.00	.725 5.80	(Sept. 16, 1931 Apr. 1, 1933) .529 4.23	.648 5.18	6.21	5.95	6.21	5.80
1933	Apr. 1, 1933 - Mar. 31, 1935	8	NON-UNION	.587 4.70	NON-UNION	.500 4.00	5.11	4.85	5.11	4.70
Bituminous Coal Code										
1933	Oct. 2, 1933 - Mar. 31, 1934	8	.570 4.56	.587 4.70	.482 3.86	.500 4.00	5.11	4.85	5.11	4.70
Amendment 1										
1934	Apr. 1, 1934 - Mar. 31, 1935	7	.651 4.56	.671 4.70	.571 4.00	.571 4.00	5.11	4.85	5.11	4.70
1935	Oct. 1, 1935 - Mar. 31, 1937		.723 5.06	.743 5.20	.563 4.50	.563 4.50	5.61	5.35	5.61	5.20

Note!
Districts include following counties:

1 - Wayne and Appanoose, Iowa and Putnam, Missouri

2 - All shooting coal mines in Wapello, Marion, Monroe, Davis, Warren, Lucas, Mahaska and Keokuk Counties.

3 - Shooting Mines in Polk, Jasper, Dallas and Boone.

4 - All mining coal mines in Boone and Webster.

1/ Source: Wage contracts of United Mine Workers of America.
2/ The strike was officially discontinued December 10, 1919. Just when the mines were opened in certain fields is not known — probably not until December 15 or 16.
3/ Approximate date when agreement went into effect.
a/ District No. 1 (Wayne and Appanoose) was non-union from (Mar. 31, 1927 to Sept. 1931 and Apr. 1, 1933 to Coal Code.
b/ Fisher, W. E., and Berenson, A., Wage Rates and Working Time in the Bituminous Coal Industry, appendix tables.
c/ Estimated — 14 per cent increase.

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TABLE 19

SECTION A

BITUMINOUS COAL INDUSTRY — IOWA

Tonnage Rates for Pick Mining, Loading and Machine Cutting.[1] 1912 to 1937

(Net Tons)

Year	Period or Wage Agreement	Pick Mining										Loading (After Machine)								Machine Cutting					
		Sub-District #1			Sub-District #2		Sub-District #3		Sub-District #4			Sub-District #1		Sub-District #2		Sub-District #3 [h]		Sub-District #4		Sub-District #1		Sub-District #2	Sub-District #3	Sub-District #4
		Putnam Co. Mo. R.O.M.	Hand Screened Picked	Hand Screened Lump	Screened R.O.M.	Screened Lump	Screened R.O.M.	Screened Lump	R.O.M.	Screened Lump		Screened Lump	After Leg. Machine	Screened Lump	R.O.M.	Screened Lump	R.O.M.	Screened Lump	R.O.M.	Cutter	Helper Screened Lump			
1912	Apr 1, 1912 - Mar. 31, 1914	960	1.150 [c]	1.150 [c]	.727 [d]	1.050	.763	1.100	Not Reported	1.050 [e] 1.200		.670 [c]	.595 [c]	[m]	Not Reported	[m]	Not Reported	[m]	Not Reported	[d] .0775	.066			
1914	Apr 1, 1914 - Mar 31, 1916	1.010	1.150 [c]	1.150 [c]	.727 [d]	1.050	.765	1.100		1.050 [e] 1.200		.675 [c]	.595 [c]	.700 [f]	.490	.725 [f]	.505	.700	Not Reported	.0800	.066	Paid	Paid	Paid
1916	Apr 1, 1916 - Mar. 31, 1918	Not Reported	1.200 [c]	1.200 [c]	.770 [d]	[d]	.795 [d]	[d]	1.125	1.250		.7125 [c]	.620 [c]		.600 [d] [g]		.618 [d]	.7291	.6562	.0845	.0685	By	By	By
1917	Apr 16, 1917 - Mar. 31, 1918		1.3111 [c]	1.3111 [c]	.870 [d]	1.2475 [d]	.895 [d]	1.2925 [d]	1.2250	1.3611		.7960 [c]	.690 [c]		.680 [d]		.695 [d]	.8179	.7361	.0944	.0763	The	The	The
1917	Nov. 1, 1917 - Apr. 1, 1920		1.4778 [c]	1.4778 [c]	.970 [d]	1.385 [d]	.995 [d]	1.435 [d]	1.3750	1.5278		.9210 [c]	.798 [c]		.760 [d]		.775 [d]	.9511	.8560	.1100	.0868	Day	Day	Day
1919	Dec 10, 1919 [a] Mar 31, 1920 "Gorfinold Award"	Not Reported	1.600 [b]	1.600 [b]	1.081 [b]	1.5778 [b]	1.106 [b]	1.636 [b]	1.5625 [b]	1.650 [b]		1.020 [b]			.865 [b]		.872 [b]	1.040 [b]	.9758 [b]	.1254 [b]	.0989 [b]			
1920	Apr. 1, 1920 - Mar. 31, 1922	1.550	1.7444 [c]	1.7444 [c]	1.210 [d]		1.235 [d]		1.6150	1.7944		1.121			.970 [d]		.985 [d]	1.1677	1.0509	.1338 [p]	.10562			
1920	Aug. 16, 1920 - Mar. 31, 1922	1.550	1.7444 [c]	1.7444 [c]	1.210 [d]		1.235 [d]		1.6150	1.7944		1.121			.970 [d]		.985 [d]	1.1677	1.0509	.1338 [p]	.10562			
1920	Sept 1, 1920 - Mar. 31, 1922 [j]	1.800	2.00 [c]	2.00 [c]	1.210 [d]		1.235 [d]		1.845	2.050		1.3128			.970 [d]		.985 [d]	1.3754	1.2379	.15679	.12962			
1922	Aug. 15, 1922 [k] - Mar. 31, 1923	1.800	2.00 [c]	2.00 [c]	1.210 [d]		1.235 [d]		1.845	2.050		1.3128			.970 [d]		.985 [d]	1.3754	1.2379	.15679	.12962			
1923	Apr. 1, 1923 - Mar 31, 1924	1.800	2.00 [c]	2.00 [c]	1.210 [d]		1.235 [d]		1.845	2.050		1.3128			.970 [d]		.985 [d]	1.3754	1.2379	.15679	.12962			
1924	Apr. 1, 1924 - Mar. 31, 1927	1.800	2.00 [c]	2.00 [c]	1.210 [d]		1.235 [d]		1.845	2.050		1.3128			.970 [d]		.986 [d]	1.3754	1.2379	.15679	.12962			
1928	Oct. 1, 1928 - Mar 31, 1930	Not Reported	Non-Union		1.040 [d]		1.065 [d]		1.620	1.800		Non-Union			.820 [d]		.835 [d]	1.1677	1.0509	Non-Union				
1930	Apr. 1, 1930 - Mar. 31, 1931		Non-Union		1.040 [d]		1.065 [d]		1.620	1.800		Non-Union			.820 [d]		.835 [d]	1.1677	1.0509	Non-Union				
1931	Apr. 1, 1931 - Mar. 31, 1933	Sept 16 1931 to Apr. 1, 1933	1.4778 [k]	1.4778	1.040 [d]		1.065 [d]		1.620	1.800	Sept 16 1931 to Apr. 1, 1933	.9210 [k]			.820 [d] [q]		.835 [d]	1.1677	1.0509	Sept 16 1931 to Apr. 1, 1933	.1100 [k]	.0868			
1933	Apr. 1, 1933 - Mar. 31, 1935	Not Reported	Non-Union		.810 [d]		.835 [d]		1.386	1.540		Non-Union			.620 [d]		.695 [d]	9400	.8460	Non-Union				
Bituminous Coal Code																								
1933	Oct 2, 1933 - Mar 31, 1934	Not Reported	1.300	1.300	.810 [d]		.835 [d]		1.386	1.540		820			.620 [d]		.695 [d]	9400	.8460	.070	.070			
Amendment 1																								
1934	Apr. 1, 1934 - Mar 31, 1935		1.410	1.410	.910 [d]		.935 [d]		1.485	1.660		910			.700 [d]		.715 [d]	1.030	927	073	078			
1935	Oct. 1, 1935 - Jan. 31, 1937		1.510	1.510	1.000 [d]		1.025 [d]		1.575	1.750		1.00			.780 [d]		.795 [d]	1.1175	1.0058	.07 3/5	.07 3/5			

1/ Source: Wage contracts of United Mine Workers of America

2/ The strike was officially discontinued December 10, 1919. Just when the mines were opened in certain fields is not known -- probably not until December 15 or 16.

3/ Increases granted to tonnage men in Sub-districts # 1 and # 4 only.

4/ Approximate date when agreement went into effect.

a/ Mines on a mine run basis only

b/ Fraser screened lump, Upper Vein

c/ Can operate on a screened coal or hand picked basis at option of operator — only Putnam County, Missouri, to operate on mine run basis

d/ All mines to operate on a mine-run basis (exceptions -- "until change can be made, not later than November 1, 1916 or if mine to be abandoned by April 1, 1917.")

e/ Centerville machine

f/ Fisher, W. E., and Bezanson, A., Wage Rates and Working Time in the Bituminous Coal Industry, appendix tables

g/ Estimated -- 14 per cent increase. This increase probably too high. The data as reported by the Coal Commission (see footnote 1/) would indicate that the increase was approximately 11 per cent

h/ Rates for loading, shooting, drilling and furnishing explosives

i/ This is the first recognized machine scale — it was understood it will take effect June 1, 1914 and expire at end of this contract period

j/ Machine shovelers have same rate as Machine Cutters

k/ Sub-District #1 signed a separate contract with United Mine Workers of America.

m/ Data not available

Note:

Districts include following counties

1 - Wayne and Appanoose, Iowa and Putnam, Missouri

2 - All shooting coal mines in Wapello, Marion, Monroe, Davis, Warren, Lucas, Mahaska and Keokuk Counties.

3 - Shooting Mines in Polk, Jasper, Dallas and Boone

4 - All mining coal mines in Boone and Webster

TABLE 20

BITUMINOUS COAL INDUSTRY -- ROCKY MOUNTAIN FUEL COMPANY--COLORADO

Hourly and Daily Wage Rates for Trackmen and Outside Common Labor, Daily Rates for Machine Runners and Helpers and Tonnage Rates for Pick Mining, Loading and Machine Cutting 1/ 1928 to 1937

(R.O.M. -- Net Tons)

Year	Period of Wage Agreement	Hours Worked per Day	Trackmen Inside		Common Labor Outside		Machine Runners and Helpers		Pick Mining						Loading (Contract)						Machine Cutting			
			hourly rate	daily rate	hourly rate	daily rate	daily Runners	rate Helpers	Vulcan Mine	Standard Mine	Industrial Mine	Columbine Mine	Grant Mine	Alpine Mine	Vulcan Mine	Standard Mine	Industrial Mine	Columbine Mine	Grant Mine	Alpine Mine	Air Mach. Vulcan Mine	Undercutting Shortwall Industrial Mine	Undercutting Shortwall Grant Mine	Undercutting Shortwall Alpine Mine
1912																								
1914																								
1916	NON-UNION								NON-UNION															
1918																								
1920																								
1922																								
1924																								
1926																					Per Face Foot	Per Face Foot	Per Ton	Per Ton
1928	Sept. 1, 1928 - Aug. 31, 1930	8	.875	7.00	.569	4.55	7.36	7.00	1.01	--	1.02	.88	.99	--	.745	1.065 g/	.765	.720 a/	.71	--	.186 g/	.175 c/	.111	
1930	Sept. 1, 1930 - Aug. 31, 1932	8	.875	7.00 d/	.569	4.55	7.36 e/	7.00	1.01	--	1.02	.88	.99	.985 f/	.745	1.065 g/	.765	.720 a/	.71	.620 h/	.186 i/	.175 c/	.111	.125
1932	Sept. 1, 1932 - Aug. 31, 1934	8	.656	5.25 j/	.531	4.00	5.50 k/	5.25	.75	--	.76	.70	.72	.67 f/	.585	.795 g/	.585	.550	.54	.440 h/	.155 i/	.131 l/	.090	.090
Bituminous Coal Code																								
1933	Oct. 2, 1933 - Aug. 31, 1934	8	.656	5.25	.531	4.25	5.50	5.25	.75	--	.76	.70	.72	.67 f/	.585	.795 g/	.585	.550	.54	.440 h/	.155 i/	.131 l/	.090	.090
Amendment 1																								
1934	July 1, 1934 - Mar. 31, 1935 2/	7	.750	5.25	.607	4.25	5.50	5.25	.85	--	.86	.80	.82	.77 f/	.665	.875 g/	.665	.630	.62	.570 h/	.177	.149	.100	.100
1935	Latest contract not available																							

1/ Source: Wage Contracts of United Mine Workers of America

2/ The tonnage occupations were increased as of April 1, 1934 to agree to the amendment to the Code

a/ Rate for machine loading $0.445 per ton

b/ To depth of 5 feet

c/ To depth of 7 feet. Breast machine rate $0.181 per face foot cut to full length of cutter bar

d/ Alpine Mine, $ 6.62

e/ Alpine Mine, $ 7.45 and $ 6.62

f/ Rate for rooms, entries or pillars

g/ Rate for cutting, loading, hauling to parting, laying straight track and timbering

h/ Rate for loading

i/ To depth of 4½ feet

j/ Alpine Mine, $ 4.72

k/ Alpine Mine, $ 5.03 and $ 4.69

l/ To depth of 7 feet. Breast machine rate $ 0.135 cut to full length of cutter bar

* NOTE:- Day Wage Scale

The wages set forth in this agreement are contingent upon competitive conditions affecting the Company's mines. In consideration thereof it is agreed:

1. That the Company will advance the basic day wage of $6.77 to $7.00 and other corresponding advances shall be made in other existing classifications of the general wage scale
2. If the basic day wage scale (as shown for the preceding month by the production records in the office of the Chief Coal Mining Inspector of the State of Colorado) of the producers of 51 per cent or more of the tonnage in Boulder and Weld Counties, not including the tonnage of the Company, is reduced below the scale of $6.77, the basic and general wage scale fixed by this agreement shall be likewise reduced forthwith, except that the Company will maintain a higher differential of 23 cents on such reduced scale, which is the advance in the basic day wage given under this agreement
3. If the present basic day wage of $6.77 now paid by operators other than the Company is increased, the Company shall only be required to pay so much of the differential as is necessary to make a basic day wage of $7.00. No payment of differential shall be required if the basic day wage equals or exceeds $7.00
4. No such differential shall be paid when operators, including the Company, producing 65 per cent of the tonnage in such district, are operating under union contracts

TABLE 21

SECTION A

BITUMINOUS COAL INDUSTRY -- COLORADO

Hourly and Daily Wage Rates for Trackmen and Outside Common Labor 1/
1917 to 1922 and 1933 to 1937

Year	Period of Wage Agreement	Hours Worked Per Day: Trackmen	Hours Worked Per Day: Outside Labor	Trackmen Inside: Northern Colorado Louisville-Erie-Frederick: Hourly Rate	Trackmen Inside: Northern Colorado Louisville-Erie-Frederick: Daily Rate	Trackmen Inside: Northern Colorado Erie-Frederick: Hourly Rate	Trackmen Inside: Northern Colorado Erie-Frederick: Daily Rate	Trackmen Inside: Southern Colorado and New Mexico: Hourly Rate	Trackmen Inside: Southern Colorado and New Mexico: Daily Rate	Common Labor Outside: Northern Colorado Louisville: Hourly Rate	Common Labor Outside: Northern Colorado Louisville: Daily Rate	Common Labor Outside: Northern Colorado Erie-Frederick: Hourly Rate	Common Labor Outside: Northern Colorado Erie-Frederick: Daily Rate	Common Labor Outside: Southern Colorado and New Mexico: Hourly Rate	Common Labor Outside: Southern Colorado and New Mexico: Daily Rate
1912															
1914	NON--UNION														
1916															
1917	Nov. 1, 1917 -- Mar. 31, 1920	8	9	.656	5.25 a/	.660	5.28 b/	.663	5.30 d/	—	—	—	.700	5.60 e/	.467	4.20 e/	.482	4.34 d/	.489	4.40 e/	.494	4.45 c/	.500	4.50 j/	.532	4.79 g/
1919	Dec. 1919 -- Mar. 31, 1920 "Garfield award"	8	9	.749	5.99 h/	.753	6.02 h/	.755	6.04 h/				.798	6.38 h/	.532	4.79 h/	.550	4.95 h/	.558	5.02 h/	.563	5.07 h/	.570	5.13 h/	.607	5.46 h/
1920	Apr. 1, 1920 - Mar. 31, 1922	8	9	.781	6.25 a/	.785	6.28 c/	.788	6.30 a/	.806	6.45 d/	.813	6.50 d/	.825	6.60 e/	.578	5.20 f/	.593	5.34 g/	.600	5.40 f/	.606	5.45 e/	.611	5.50 d/	.643	5.79 g/
1922	Aug. 16, 1920 2/ - Mar. 31, 1922	8	9	.969	7.75	.973	7.78	.975	7.80	.994	7.95	1.000	8.00	1.013	8.10	.744	6.70	.760	6.84	.767	6.90	.772	6.95	.778	7.00	.810	7.29
1924	NON-UNION																										
1926																											
1928																											
1930																											
1932																											
				Northern Colorado Louisville-Erie-Frederick				Southern Colorado and New Mexico							Northern Colorado Louisville		Northern Colorado Erie-Frederick				Southern Colorado and New Mexico			
Bituminous Coal Code																											
1933	Oct. 9, 1933 - Aug. 31, 1934	8	8	.65 6/8	5.25	.65 6/8	5.25			.58 3/4	4.70					.53 1/8	4.25	.53 1/8	4.25			.46 7/8	3.75				
Amendment I																											
1934	Apr. 1, 1934 - Mar. 31, 1935	7	7	.75	5.25	.75	5.25			.728	5.10					.607	4.25	.607	4.25			.586	4.10				
1935	Oct. 1, 1935 - Mar. 31, 1937	7	7	.821	5.75	.821	5.75			.800	5.60					.679	4.75	.679	4.75			.657	4.60				

1/ Wage contracts of the United Mine Workers of America.
2/ Approximate date when agreement went into effect.

a/ Rate for 4 mines
b/ Rate for 10 mines
c/ Rate for 12 mines
d/ Rate for 2 mines
e/ Rate for 1 mine
f/ Rate for 3 mines
g/ Rate for 6 mines
h/ Estimated--14 per cent increase

TABLE 22

SECTION A

BITUMINOUS COAL INDUSTRY -- COLORADO

Tonnage Rates for Pick Mining 1/
1917 to 1922 and 1933 to 1937
(R.O.M. -- Net Tons)

Year	Period of Wage Agreement	See Note	Evans Fuel Co Firestone Mine Aliance Coal Co.	Victor American Fuel Co Raven Wood	Victor American Fuel Co Radient and Handler	McNally and Thompson Maitland Mine	Black Cannon Coal and Fuel Co Cadell	Black Cannon Coal and Fuel Co New Maitland	Gibson Lumber and Fuel Co. Royal George	Victor American Fuel Co. Rapson	Cannon Reliance Coal Co Reliance Basic	Cannon Reliance Coal Co Reliance Under 4'6"	United Collieries Co Monroe	Palisade Coal and Supply Co. Under 3'	Palisade Coal and Supply Co. 3 ft. to 4½ ft.	Palisade Coal and Supply Co. Over 4½ ft.	Colorado Springs Co. 6 ft. and over	Champion Fuel Co.	Star Coal Co 3½ ft. and over	Jewel Coal Co.
1912																				
1914		NON - UNION									NON-UNION									
1916																				
1917	Nov. 1, 1917 - April, 1920	.75	.85	.78 b/	1.18	1.13	.975	Not Rep	.90 .94	1.00 Vein #2 and #4 1.12 Vein 3	.86	Not Reported		Not Rep	Not Reported			Not Reported			
1919	Dec. 1919 - May 31, 1920 "Garfield award"	.855 a/	.969 a/	.889 a/	1.345	1.288 a/	1.112 a/	g/	{1.026 (1.077	1.14 1.277} a/	.980 a/										
1920	April 1, 1920 - May 31, 1922	.99	1.09 a/	1.02 c/	1.42	1.37	1.21	1.49	Not Rep	1.20	Not Rep	1.09	1.14	1.02 d/	1.59	1.34	1.13	1.00	1.115	1.12	1.19
1922																				
1924																				
1926																				
1928		NON - UNION									NON - UNION									
1930																				
1932																				

Bituminous Coal Code		Northern Colorado Louisville District	Louisville Dist. (Exceptions) Black Diamond Mine	Louisville Dist. (Exceptions) Crown Mine	Erie -- Frederick District		Southern Colo. (Colorado Fuel and Iron Co) d/ Morley	Fred-erick	Cam-eron	Keb-ler	Non-ac	Crested Butte 10' and over	Crested Butte 7' and less 10'	Crested Butte Less than 7'
1933	Oct. 9, 1933 - Aug. 31, 1934	.76 e/	.75	.78	.70 f/	Nov. 1, 1933 - May 31, 1934	.68	.68	.68	.68	.68	.62	.65	.68
Amendment 1														
1934	April, 1934 - May 31, 1935	.86	.85	.88	.80	April, 1934 - May 31, 1935	.78	.78	.78	.78	.78	.72	.75	.78
1935	Oct. 1, 1935 - May 31, 1937	.95	.94	.95	.89	Oct. 1, 1935 - May 31, 1937	.87	.87	.87	.87	.87	.81	.84	.87

1/ Source: Wage contracts of United Mine Workers of America

a/ Evans Fuel Company only
b/ Rate for Delagua, Hastings, Bowen, and Gray Creek Mines
c/ Rate for Delagua, Hastings #5, Cass, and Gray Creek Mines
d/ Boulder Black Diamond Coal Company, - $1.02½
e/ Pickmining, loading, hauling to parting, laying straight track and timbering, 64½ cents per ton
f/ Pickmining, loading, hauling to parting, laying straight track and timbering, 77 cents per ton
g/ Estimated -- 14 per cent increase
h/ No specific tonnage rates are included in the Southern Colorado - New Mexico agreement. The rates of the Colorado Fuel and Iron Company can be considered typical of those paid by other large companies in this area

NOTE: PICKMINING

These rates are for the following mines:

	Mines Reporting in 1917 and 1920	Mines Reporting only in November 1917	Mines Reporting only in April 1920
Victor American Fuel Company			
Wedge Mine	✓		
Pinnacle Mine	✓		
Colorado and Utah Coal Company			
Mt. Harrie Mine	✓		
International Fuel Company			1.04 High Vein
Wolf Creek Mine	✓		1.10 Low Vein
Bear River Coal Company			
Bear River Mine	✓		
Elk Creek Mining Company		✓	
Routt Pinnacle Company		✓	
Allen Coal Mine		✓	
Amalgamated Development Company			✓
Nik Creek			
Indian Coal Mining Company		✓	

TABLE 23 — SECTION A

BITUMINOUS COAL INDUSTRY — COLORADO

Tonnage Rates for Loading 1/
1917 to 1922 and 1933 to 1937
(B.O.M. — Net Tons)

Year	Period of Wage Agreement	* (See Note)	Colorado Utah Coal Co. and Elk Creek Mining Co	Victor American Fuel Co: Delagua Mine	Victor American Fuel Co: Hastings #5 Mine	Victor American Fuel Co: Ravenwood Mine	Victor American Fuel Co: Radient Mine	Victor American Fuel Co: Rapson Mine	McNally and Thompson Maitland	Black Cannon Coal & Fuel Co: Cadell	Black Cannon Coal & Fuel Co: New Maitland	Black Cannon Coal & Fuel Co: Odell	Alliance Coal Co. Ojo	Monument Valley Coal Mining Co.	Wolfe Park Leasing Co.	Cannon Reliance Coal Co.	Evans Fuel Co: United Collieries Jewel Coal Co	Boulder Black Diamond Coal Co.	Palisade Coal and Supply Co.	Colorado Spring Co.	Champion Fuel Co.
1912																					
1914						NON-UNION															
1916																					
1917	Nov. 1, 1917 - Apr. 1, 1920	.58	.56	.535 b/	.535	.75	.66 d/	.59	.686	Not Rep.	.68	.73	.675	.80	.67	Not Rep.	Not Rep.	Not Rep.	Not Rep.	Not Rep.	Not Rep.
1919	December, 1919 - Mar. 31, 1920 "Garfield Award"	.661 f/	.638 f/	.610 f/	.610 f/	.855 f/	.752 f/	.673 f/	.782 f/	-	.775 f/	.832 f/	.770 f/	.912 f/	.764 f/	-	-	-	-	-	-
1920	Apr. 1, 1920 - Mar. 31, 1922	.765	.765 a/	.73	.75 c/	Not Rep.	.85 d/	Not Rep.	.86	.90	Not Rep.	Not Rep.	Not Rep.	Not Rep.	Not Rep.	.87	.77	.78	.90	.81 g/	.865
1922																					
1924																					
1926						NON-UNION															
1928																					
1930																					
1932																					

		NORTHERN COLORADO — LOUISVILLE DISTRICT: Machine Loading	Loading, Cutting, Laying Straight Track & Timber	Shoveling Only	Shoveling, Laying, Straight Track and Timbering	Crown Mine-only Loading--men Shoot	NORTHERN COLORADO — ERIE--FREDERICK: Loading	Loading, Cutting, Laying Straight Track and Timbering	Shoveling Only	SOUTHERN COLORADO 2/ (Colorado Fuel and Iron Co.): Cameron, Kebler and Crested Butte: Track Mach.	Cameron, Kebler and Crested Butte: Shortwall over 4'	Cameron, Kebler and Crested Butte: Shortwall under 4'	Nonac Shortwall Mach
Bituminous Coal Code													
1933	Oct. 9, 1933 - Aug. 31, 1934	.585	.800	.38	.42	.585	.55	.71	.38	Nov. 1, 1933 - Mar. 31, 1934	.455	.50	.51	.55
Amendment 1														
1934	Apr. 1, 1934 - Mar. 31, 1935	.665	.880	.460	.50	.665	.63	.79	.46	Apr. 1, 1934 - Mar. 31, 1935	.535	.58	.59	.63
1935	Oct. 1, 1935 - Mar. 31, 1937	.745	.995	.595	Loading, laying straight track and setting props .660	.745	.71	.908	.57	Oct. 1, 1935 - Mar. 31, 1937	.615	.66	.67	.71

* NOTE: LOADING

1/ Source: Wage contracts of United Mine Workers of America.

a/ Rate for Colorado, Utah Coal Company only.
b/ Same rate for Bowen and Gray Creek Mines.
c/ Same rate for Cass Mine, Gray Creek Mine.
d/ Same rate for Chandler Mine.
e/ The loader of machine coal is to pay the machine operator the 20 per cent increase in wages granted said machine operator.
f/ Estimated - 14 per cent increase.
g/ No specific tonnage rates are included in the Southern Colorado - New Mexico agreement. The rates of the Colorado Fuel and Iron Company can be considered typical of those paid by other large companies in this area.

These rates are for the following mines:-

	Mines reporting in Nov. 1917 & 1920	Mines reporting only in November 1917	Mines reporting only in April 1920
Victor American Fuel Company			
Wadge Mine	✓		
Pinnacle Mine	✓		
Amalgamated Development Corporation			
Elk Creek Mine			✓
Routt Pinnacle Company		✓	
Allen Coal Mine		✓	
Indian Coal Mining Company		✓	

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TABLE 24

BITUMINOUS COAL INDUSTRY — COLORADO

SECTION A

Tonnage Rates for Machine Cutting 1/
1917 to 1922 and 1933 to 1937
(R.O.M. - Net Tons)

Year	Period of Wage Agreement	* (See Note) Cutter	* (See Note) Helper	Colorado and Utah Coal Co. Cutters	Colorado and Utah Coal Co. Helpers	Victor American Fuel Company — Delagua Cutters	Delagua Helpers	Hastings 5# Cutters	Hastings 5# Helpers	Ravenwood Cutters	Ravenwood Helpers	Radient Cutters	Radient Helpers	McNally and Thompson Maitland Cutters	McNally and Thompson Maitland Helpers	Elk Creek Mining Co Cutter	Routt Pinnacle Co Cutter	Allen Coal Mine Cutter	Palisade Coal Co Cutt. & Help.	Jewel Coal Co. Cutt. & Help.	Cannon Reliance Coal Co. Cannon Cutter	Cannon Reliance Coal Co. Cannon Helper	Cannon Reliance Coal Co. Reliance Cutt.	Cannon Reliance Coal Co. Reliance Helper	United Collieries Cutt. & Help.
1912																									
1914		NON -		UNION																					
1916																									
1917	Nov.1,1917 - Apl 1,1920	.06	NOT REP.	.09	NOT REP.	.07 a/	.06 a/	.07	.06	.11 c/	.09 c/	.065 d/	.055 d/	.20	.18	.09	.07	.06	NOT REP	NOT REP.	NOT REP.		NOT REP.		NOT REP.
1919	Dec. 1919 - Mar. 31, 1920 "Garfield award"	k/		k/		k/		k/		k/		k/		k/		k/	k/	k/							
1920	Apr.1, 1920-Mar31,1922	.0675	.0575	.0675	.0575	.0925	.0825	.10 b/	.09 b/	.195	.165	.09 d/	.08 d/	.24 e/ .26 f/		NOT REP.		NOT REP.	.32	.40	.095	.075	.105 g/	.09	.23
1922																									
1924		NON -		UNION																					
1926																									
1928																									
1930																									
1932																									

Year	Period of Wage Agreement	Northern Colorado — Louisville Undercutting Shortwall Machine	Louisville Undercutting Puncher Machine	Louisville Crown Mine Only	Erie-Frederick Undercutting Shortwall High Coal	Erie-Frederick Undercutting Shortwall Low Coal	Erie-Frederick Undercutting Puncher Mach.	Erie-Frederick Undercutting and Shearing C.L.U. Mch. Wide Work
Bituminous Coal Code								
1933	Oct 9, 1933 - Aug. 31, 1934	.13	.20	.16	.09	.097	.15	.065
Amendment 1								
1934	Apr. 1, 1934 - Mar. 31, 1935	.14	.21	.17	.10	.107	.16	.075
1935	Oct. 1, 1935 - Mar. 31, 1937	.15	.22	.18	.11	.117	.17	.085

Year	Period of Wage Agreement	Southern Colorado -- (Colorado Fuel and Iron Co.) h/ Cameron and Nonac Track Mch	Cameron and Nonac Undercutting Shortwall Under 4'	Cameron and Nonac Undercutting Shortwall 4' to 6'	Cameron and Nonac Undercutting Shortwall 6' + Over	Kebler Shortwall Cutting-Heavy Pitch Under 5'	Kebler Shortwall Cutting-Heavy Pitch 5' to 6'	Kebler Shortwall Cutting-Heavy Pitch 6' + Over	Crested Butte Shortwall Cutting Under 6'	Crested Butte Shortwall Cutting 6' to 8'	Crested Butte Shortwall Cutting Over 8'
Bituminous Coal Code											
1933	Nov. 1, 1933 - Mar. 31, 1934	.058	.116	.106	.095	.148 i/	.138 i/	.127 i/	.09	.085	.074
Amendment 1											
1934	Apr. 1, 1934 - Mar. 31, 1935	.068 i/	.126	.116	.105	.158 i/	.148 i/	.137 i/	.10	.095	.084
1935	Oct. 1, 1935 - Mar. 31, 1937	.078 i/	.136	.126	.115	.168 i/	.158 i/	.147 i/	.11	.105	.094

1/ Source: Wage Contracts of United Mine Workers of America

a/ Same rate for Bowen and Gray Creek Mines
b/ Same rate for Cass Mine and Gray Creek Mines
c/ Cutting in slate
d/ Same rate for Chandler Mine
e/ Top seam
f/ Lennox seam
g/ Shortwall machine
h/ No specific tonnage rates are included in the Southern Colorado-New Mexico agreement. The rates of the Colorado Fuel and Iron Company can be considered typical of those paid by other large companies on this area
i/ Cutting and shearing
j/ Cutting on light pitch is $0.032 less per ton
k/ The increase received by the cutters is not known

* NOTE: CUTTERS and HELPERS

These rates are for the following mines: -

Victor American Fuel Company
Wadge Mine
Pinnacle Mine

Amalgamated Development Corporation
Elk Creek Mine

Wolfe Park Leasing Company
Wolfe Mine

Mines Reporting November 1917 and 1920	Mines Reporting only in 1917	Mines Reporting only in 1920
✓		
✓		
		✓
	✓	

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TABLE 25

SECTION A

BITUMINOUS COAL INDUSTRY -- SOUTHERN WYOMING

Hourly and Daily Wage Rates for Trackmen and Outside Common Labor and Daily Rates for Machine Cutters and Helpers and Mechanical Loading.[1] 1912 to 1937

Year	Period of Wage Agreement	Hours Worked per day	Trackmen Inside All Districts		Common Labor Outside All Districts		Machine Cutters All Districts	Machine Helpers All Districts	Mechanical Loading Scale: Joy, Thew, Goodman Shovel and Similar Loading Machines		Mechanical Loading Scale: Scraper Loader		Mechanical Loading Scale: Duckbill Operators	Mechanical Loading Scale: Shoveling onto Conveyor and Conveyor Loader
			Hourly Rate	Daily Rate	Hourly Rate	Daily Rate	Daily Rate	Daily Rate	Operator Daily Rate	Helper Daily Rate	Operator Daily Rate	Helper Daily Rate	Daily Rate	Daily Rate
1912	Apl. 1, 1912 - Sept. 1, 1914	8	.431	3.45	.313	2.50	3.90	3.46						
1914	Sept. 1, 1914 - Sept. 1, 1916	8	.431	3.45	.313	2.50	3.90	3.46						
1916	Sept 1, 1916 - Sept. 1, 1918	8	.440	3.62	.346	2.76	3.90	3.52						
1917	May 1, 1917 - Aug. 31, 1918	8	.503	4.02	.380	3.04	4.40	4.02						
1917	Nov. 1, 1917 - Mar. 31, 1920	8	.678	5.42	.556	4.44	5.80	5.42						
1919	Dec. 10, 1919[2] - Mar. 31, 1920 "Lufull award"	8	.773	6.18	.635[b]	5.08[b]	6.6[c]	6.18[c]						
1920	Apl. 1, 1920 - Mar. 31, 1922	8	.803	6.42	.680	5.44	6.80	6.42						
1920	Aug. 16, 1920 - Mar. 31, 1922	8	.990	7.92	.868	6.94	8.30	7.92						
1922	Aug. 15, 1922[3] - Mar. 31, 1925	8	.990	7.92	.868	6.94	8.30	7.92						
1923	Apl. 1, 1923 - Mar. 31, 1924	8	.990	7.92	.868	6.94	8.30	7.92						
1924	Apl 1, 1924 - Mar. 31, 1927	8	.990	7.92	.868	6.94	8.30	7.92						
1928	Oct. 16, 1928 - June 30, 1932	8	.840	6.72	.736	5.89	8.50	8.00	9.00	8.00	9.00	8.00	8.00	7.50
1932	July 1, 1932 - Apl. 30, 1933	8	.678	5.42	.555	4.44	6.80	6.00	7.20	6.00	7.20	6.00	6.40	6.00
1933	May 1, 1933 - Apl. 30, 1934	8	.678	5.42	.556	4.44	6.80	6.00	7.20	6.00	7.20	6.00	6.40	6.00
Bituminous Coal Code														
1933	Oct. 2, 1933 - Mar. 31, 1934	8	.678	5.42	.555	4.44	6.80	6.00	7.20	6.00	7.20	6.00	6.40	6.00
Amendment 1														
1934	Apl. 1, 1934 - Mar. 31, 1935	7	.776	5.42	.635	4.44	6.80	6.00	7.20	6.00	7.20	6.00	6.40	6.00
1935	Oct. 1, 1935 - Mar. 31, 1937	7	.845	5.92	.705	4.94	7.50	6.70	7.90	6.70	7.90	6.70	7.10	6.70

1/ Source: Wage contracts of United Mine Workers of America

2/ The strike was officially discontinued December 10, 1919. Just when the mines were opened in certain fields is not known -- probably not until December 15 or 16

3/ Approximate date when agreement went into effect

a/ Fisher, W. E., and Besaneon, A., Wage Rates and Working Time in the Bituminous Coal Industry, appendix tables.

b/ Estimated -- using same differential as always held between Northern and Southern Wyoming

c/ Estimated -- 14 per cent increase

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TABLE 26 EXHIBIT A

BITUMINOUS COAL INDUSTRY—SOUTHERN WYOMING

Tonnage Rates for Pick Mining, Loading and Machine Cutting,[1] 1912 to 1937
(Run-of-Mine — Net Ton)

Pick Mining

Year	Period of Wage Agreement	Rock Springs 5 ft. & over	Rock Springs Less than 5 ft.	Hanna Lower Seam #2	Cumberland #1 and 2 and Glencoe 6 ft. and over	Cumberland #1 and 2 and Glencoe 5 to 6 ft.	Kemmerer Basic #1,3,5,6	Kemmerer Under 6 ft.	Diamondville and Oakley Big Vein 6 ft. and over	Diamondville and Oakley Big Vein 5 to 6 ft.	Diamondville "00" Vein	Oakley "00" Vein	Blazon Coal Co. [illegible]	Blazon Coal Co. [illegible]	Blazon Coal Co. [illegible]
1912	Sept 1, 1912–Sept 1, 1914	.58	.67	.54	.54	.56	.55	.60	.56	.58					
1914	Sept 1, 1914–Sept 1, 1916	.58	.67	.54	.54	.56	.55	.60	.56	.58					
1916	Sept 1, 1916–Sept 1, 1918	.60	.69	.62	.56	.58	.57	.62	.58	.60	.67	.62			
1917	May 1, 1917–Aug 31, 1918	.67	.77	.62	.62	.65	.64	.69	.65	.67	.74	.69			
1917	Nov 1, 1917–Mar. 31, 1920	.77	.69	.72	.72	.75	.74	.79	.75	.77	.87	.82			
1919	Dec. 11, 1919[2]–Mar. 31, 1920 "Garfield award"	.88[b]	.99[b]	.82[b]	.82[b]	.86[b]	.86[b]	.90[b]	[illegible]	.88[b]	.99[b]	.93[b]			
1920	Apr. 1, 1920–Mar. 31, 1922	1.01	1.11	.96	.96	.99	.98	1.03	.99	1.01	1.11	1.06			
1920	Aug 16, 1920–Mar. 31, 1922	1.01	1.11	.96	.96	.99	.98	1.03	.99	1.01	1.11	1.06			
1922	Aug. 16, 1922[3]–Mar. 31, 1923	1.01	1.11	.96	.96	.99	.98	1.03	.99	1.01	1.11	1.06			
1923	Apr. 1, 1923–Mar. 31, 1924	1.01	1.11	.96	.96	.99	.98	1.03	.99	1.01	1.11	1.06			
1924	Apr. 1, 1924–Mar. 31, 1927	1.01	1.11	.96	.96	.99	.98	1.03	.99	1.01	1.11	1.06	.96	.99	1.06
1928	Aug. 16, 1928–June 30, 1932	.85	.95	.80	.80	.83	.82[a]		.83	.85	.95	.90	.80	.83	.90
1932	July 1, 1932–Apr. 30, 1933	.70	.80	.70	.68	.71	.67[d]					.75	.68	.71	.76
1933	May 1, 1933–Apr. 30, 1934	.70	.80	.70	.68	.71	.67[d]					.75	.68	.71	.76
Bituminous Coal Code															
1933	Oct. 2, 1933–Mar. 31, 1934	.70	.80	.70	.68	.71	.67[d]					.75	.68	.71	.76
Amendment 1															
1934	Apr. 1, 1934–Mar. 31, 1935	.80	.90	.80	.78	.81	.77[d]					.85	.78	.81	.86
1935	Oct. 1, 1935–Mar. 31, 1937	.89	.99	.89	.87	.90	.86					.94	.87	.90	.95

Loading (After Machine)

Year	Period of Wage Agreement	Rock Springs Loading (5 ft. & over)	Rock Springs Loading (under 5 ft.)	Rock Springs Loading, Drilling and Shooting (5 ft. & over)	Rock Springs Loading, Drilling and Shooting (under 5 ft.)	Hanna Loading	Hanna Loading, Drilling and Shooting	Cumberland #1 and #2	Glencoe (Coal undercut, drilled and shot by company)	Kemmerer	Diamondville "00" Vein Loading, Drilling & Shooting	Oakley "00" Vein Loading, Drilling & Shooting [illegible]	Oakley "00" Vein Loading, Drilling & Shooting [illegible]
1912	Sept 1, 1912–Sept 1, 1914	.340[c]											
1914	Sept 1, 1914–Sept 1, 1916	.340[c]											
1916	Sept 1, 1916–Sept 1, 1918	.350[c]						No scale reported	.35	No scale reported	.54	.54	.62
1917	May 1, 1917–Aug 31, 1918	.400[c]							.42		.61	.61	.67
1917	Nov 1, 1917–Mar. 31, 1920	.490[c]							.47		.68	.68	.66
1919	Dec. 11, 1919–Mar. 31, 1920	.560[c]							.51[b]		.78[b]	.78[b]	.76[b]
1920	Apr. 1, 1920–Mar. 31, 1922	.66		.81		.68	.83		.70		.89	.89	.87
1920	Aug 16, 1920–Mar. 31, 1922	.66		.81		.66	.83		.70		.89	.89	.87
1922	Aug. 16, 1922–Mar. 31, 1923	.66		.81		.66	.83		.70		.89	.89	.87
1923	Apr. 1, 1923–Mar. 31, 1924	.66		.81		.66	.83		.70		.89	.89	.87
1924	Apr. 1, 1924–Mar. 31, 1927	.66		.81		.66	.83		.70		.89	.89	.87
1928	Aug. 16, 1928–June 30, 1932	.555	.60	.68			.69		.54		.73	.73	.71
1932	July 1, 1932–Apr. 30, 1933	.45	.49	.55			.56		.46			.60	.60
1933	May 1, 1933–Apr. 30, 1934	.45	.49	.55			.56		.46			.62	.60
1933	Oct. 2, 1933–Mar. 31, 1934	.45	.49	.55			.56		.46			.62	.60
1934	Apr. 1, 1934–Mar. 31, 1935	.53	.57	.63			.64		.54			.70	.68
1935	Oct. 1, 1935–Mar. 31, 1937	.60	.64	.71			.72		.63			.70	.76

Machine Cutting

Year	Period of Wage Agreement	Rock Springs Cutters (Per Cut; from 1920 Cutting only Per Ton; from 1928 5 ft. & over)	Rock Springs Helpers (Per Cut; from 1928 under 5 ft.)	Hanna Undercutting (Per Ton)	
1912	Sept 1, 1912–Sept 1, 1914	.17	.155		Other districts do not report a cutting scale
1914	Sept 1, 1914–Sept 1, 1916	.17	.166		
1916	Sept 1, 1916–Sept 1, 1918	.17	.155		
1917	May 1, 1917–Aug 31, 1918	.186	.170		
1917	Nov 1, 1917–Mar. 31, 1920	.20	.195		
1919	Dec. 11, 1919–Mar. 31, 1920				
1920	Apr. 1, 1920–Mar. 31, 1922	.13		.11	
1920	Aug 16, 1920–Mar. 31, 1922	.13		.11	
1922	Aug. 16, 1922–Mar. 31, 1923	.13		.11	
1923	Apr. 1, 1923–Mar. 31, 1924	.13		.11	
1924	Apr. 1, 1924–Mar. 31, 1927	.13		.11	
1928	Aug. 16, 1928–June 30, 1932	.10	.14	.09	
1932	July 1, 1932–Apr. 30, 1933	.08	.12	.07	
1933	May 1, 1933–Apr. 30, 1934	.08	.12	.07	
1933	Oct. 2, 1933–Mar. 31, 1934	.08	.12	.07	
1934	Apr. 1, 1934–Mar. 31, 1935	.09	.13	.08	
1935	Oct. 1, 1935–Mar. 31, 1937	.10	.14	.09	

1/ Source: Wage contracts of United Mine Workers of America.
2/ The strike was officially discontinued December 10, 1919. Just when the mines were opened in certain fields is not known - - probably not until December 15 or 16.
3/ Approximate date when agreement went into effect.

a/ Fisher, W. E., and Bezanson, A., Wage Rates and Working Time in the Bituminous Coal Industry, appendix tables.
b/ Estimated - - 14 per cent increase.
c/ For Mines # 3, 3a and 4 at cutlet only.
d/ Coal undercut by company.

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TABLE 27

BITUMINOUS COAL INDUSTRY — NORTHERN WYOMING

Hourly and Daily Wage Rates for Trackmen and Outside Common Labor and Daily Rates for Machine Cutters and Helpers and Mechanical Loading.[1] 1912 to 1937

Year	Period of Wage Agreement	Hours Worked per day	Trackmen Inside All Districts		Common Labor Outside All Districts		Machine Cutters All Districts	Machine Helpers All Districts	Mechanical Loading Scale: Joy Thew, Goodman, Shovel and similar loading machines		Mechanical Loading Scale: Scraper Loader		Mechanical Loading Scale: Duck Bill Operator	Mechanical Loading Scale: Shoveling onto Conveyor and Conveyor Loader
									Operator	Helper	Operator	Helper		
			hourly rate	daily rate	hourly rate	daily rate	daily rate	daily rate	daily rate	daily rate	daily rate	daily rate	daily rate	daily rate
1912	Sept. 1, 1912 - Sept 1, 1914	8	.431	3.45	.325	2 60	3.90	3 45						
1914	Sept. 1, 1914 - Sept. 1, 1916	8	.451	3.45	.325	2.60	3.90	3.45						
1916	Sept 1, 1916 - Sept. 1, 1918	8	.440	3.52	.358	2.86	3.90	3.52						
1917	May 1, 1917 - Aug 31, 1918	8	.503	4 02	.393	3 14	4.40	4.02						
1917	Nov. 1, 1917 - Sept. 1, 1920	8	678	5.42	.568	4.54	5.80	5. 42						
1919	Dec. 10, 1919[2] - Mar. 31, 1920 "Garfield Award"	8	775[a]	6.18	.647[a]	5.18	6.61	6. 18						
1920	Apr. 1, 1920 - Mar. 31, 1922	8	803	6.42	692	5.54	6.86[a]	6. 42[a]						
1920	Aug. 16, 1920 - Mar. 31, 1922	8	990	7.92	.880	7.04	8.30	7. 92						
1922	Aug. 21, 1922 - Mar. 31, 1923	8	.990	7.92	.880	7.04	8 30	7 92						
1923	Apr. 1, 1923 - Mar. 31, 1924	8	990	7.92	.880	7.04	8 30	7 92						
1924	Mar. 19, 1924 - Mar. 31, 1927	8	990	7.92	.880	7.04	8.30	7. 92						
1928	Dec. 1, 1928 - June 30, 1932	8	840	6.72	.749	5.99	8.50	8. 00	9 00	8 00	9 00	8 00	8.00	7.50
1932	Aug. 4, 1933 - Apr. 30, 1933	8	678	5.42	.568	4.54	6.80	6 00	7. 20	6. 00	7. 20	6. 00	6. 40	6. 00
1933	May 1, 1933 - Apr. 30, 1934 Bituminous Coal Code	8	678	5 42	.568	4.54	6.80	6. 00	7. 20	6. 00	7. 20	6 00	6. 40	6. 00
1933	Oct. 2, 1933 - Mar. 31, 1934 Amendment 1	8	.678	5.42	.5675	4.54	6.80	6.00	7 20	6. 00	7. 20	6. 00	6. 40	6. 00
1934	Apr. 1, 1934 - Mar. 31, 1935	7	.775	5.42	.649	4.54	6. 80	6. 00	7 20	6. 00	7. 20	6. 00	6. 40	6 00
1935	Oct. 1, 1935 - Mar. 31, 1937	7	.845	5.92	.705	504	7.50	670	7 90	6.70	7 90	6.70	7.10	670

1/ Source: Wage Contracts of United Mine Workers of America
2/ The strike was officially discontinued December 10, 1919. Just when the mines were opened in certain fields is not known -- probably not until December 15 or 16

a/ Fisher, W. E., and Berganson, A., Wage Rates and Working Time in the Bituminous Coal Industry, appendix tables
b/ Estimated

TABLE 28

SECTION A

BITUMINOUS COAL INDUSTRY -- NORTHERN WYOMING

Tonnage Rates for Pick Mining, Loading, and Rates per square foot for Machine Cutting 1/ 1912 to 1937

(Run-of-Mine -- Not Tons)

Year	Period of Wage Agreement	Pick Mining: Big Horn Collieries, Crosby and Co. Lark Seam Across Pitch	Pick Mining: Big Horn Collieries, Crosby and Co. Lark Seam Up Pitch	Pick Mining: Cambria Fuel Co. 5 Ft. and Over	Pick Mining: Cambria Fuel Co. 4 to 5 Ft.	Pick Mining: Cambria Fuel Co. 3 to 4 Ft.	Pick Mining: Sheridan County	Loading (After Machine): Big Horn Collieries Crosby: Loading and Shooting (Across Pitch)	Loading (After Machine): Big Horn Collieries Crosby: Loading Timbering & Track-Laying (Rooms)	Loading (After Machine): Big Horn Collieries Crosby: Loading, Shooting & Cutting (h)	Loading (After Machine): Owl Creek Coal Co.: Loading & Shooting (Across Pitch)	Loading (After Machine): Owl Creek Coal Co.: Loading Timbering Track-Laying (Rooms)	Loading (After Machine): Owl Creek Coal Co.: Loading Shooting and Cutting (h)	Loading (After Machine): Owl Creek Coal Co.: Loading	Loading (After Machine): Cambria Fuel Co.: Loading and Shooting 5 Ft. & Over	Loading (After Machine): Cambria Fuel Co.: Loading and Shooting 4 to 5 Ft.	Loading (After Machine): Cambria Fuel Co.: Loading and Shooting 3 to 4 Ft.	Loading (After Machine): Cambria Fuel Co.: Loading, Timbering and Track Laying	Loading (After Machine): Sheridan County: Loading and Shooting	Loading (After Machine): Sheridan County: Loading, Timbering & Track-Laying	Machine Cutting (Per Square Foot): Big Horn Collieries Co. Crosby: Machine Cutting per Square Foot	Machine Cutting (Per Square Foot): Big Horn Collieries Co. Crosby: Cutting with Bars or Post Punchers Across Pitch per Square Foot	Machine Cutting (Per Square Foot): Owl Creek Coal Co.: Machine Cutting per Square Foot	Machine Cutting (Per Square Foot): Owl Creek Coal Co.: Cutting with Bars or Post Punchers Across Pitch per Square Foot: Cutter	Machine Cutting (Per Square Foot): Owl Creek Coal Co.: Cutting with Bars or Post Punchers Across Pitch per Square Foot: Helper	Machine Cutting (Per Square Foot): Cambria Fuel Co.: Company Cutting per Square Foot: Cutter	Machine Cutting (Per Square Foot): Cambria Fuel Co.: Company Cutting per Square Foot: Helper	Machine Cutting (Per Square Foot): Sheridan County: Big Machine Cutting per Ton per Day: Cutter	Machine Cutting (Per Square Foot): Sheridan County: Big Machine Cutting per Ton per Day: Helper
1912	Sept 1, 1912 - Sept 1, 1914	.740	.770	.570	.680	.770	.550 2/	.470	.348	62					.420	.520	.620	.360 3/	.400	.340 3/					.025	.0175	.295	.256
1914	Sept 1, 1914 - Sept 1, 1916	.740	.780	.590	.680	.770	.550 2/	.470	.340 3/	62	.470	.340 3/	.620		.428	.550	.620	.360 3/	.400	.340 3/	.03	.06	.03	.03¼	.02¾	.025	.0175	.295	.256
1916	Sept 1, 1916 - Sept 1, 1918	.760	.790	.610	.700	.790	.570 2/	.490	.360 3/		.490			.350 3/	.440	.540	.660	.370 3/	.420	.350 3/	.03	.06	.03	.03¼	.02¾	.025	.0175	.295	.256
1917	May 1, 1917 - Aug 31, 1918	.840	.870	.660	.780	.870	.640 2/	.560	.428 3/		.560			.420 3/	.518	.610	.716	.440 3/	.490	.420 3/	.0314	.0627	.0314	.0388	.0263	.027	.019	2.18	ELECTRIC PER YARD (Round)
1917	Nov. 1, 1917 - Sept 1, 1920	.940	.970	.780	.880	.970	.740 2/	.650	.490 3/		.650			.490 3/	.600	.700	.800	.510 3/	.585	.490 3/	.0361	.0721	.0361	.0388	.0333	.0277	.020	2.39	
1919	Dec. 10, 1919 4/ - Mar 31, 1920 "Garfield Award"	1.075 5/	1.106 5/	.880 5/	1.008 5/	1.106 5/	.844 5/	.743 5/	.559 5/		.743 5/			.569 5/	.710 5/	.788 5/	.912 5/	.581 5/	.684 5/	.559 5/	6/	.0760 5/	6/	.0760 6/	.0486 5/			2.68 6/	
1920	Apr 1, 1920 - Mar 31, 1922	1.180	1.210	1.020	1.120	1.210	.980	.880	.700 3/		880			.700 3/	.830	.930	1.080	.720 3/	.815	.700 3/	.04	.0798	.04	.0798	.0289	.0205		2.87	
1920	Aug 16, 1920 - Mar. 31, 1922	1.180	1.210	1.020	1.120	1.210	.980	.880	.700 3/		880			.700 3/	.830	.930	1.080	.720 3/	.815	.700 3/	.04	.0798	.04	.0798	.0289	.0205		2.87	
1922	Aug. 21, 1922 - Mar. 31, 1923	1.180	1.210	1.020	1.120	1.210	.980	.880	.700 3/		880			.700 3/	850	.930	1.080	.720 3/	.815	.700 3/	.04	.0798	.04	.0798	.0289	.0205		2.87	
1923	Apr. 1, 1923 - Mar 31, 1924	1.180	1.210	1.020	1.120	1.210	.980	.880	.700 3/		880			.700 3/	880	980	1.080	.720 3/	.815	.700 3/	.04	.0798	.04	.0798	.0289	.0205		2.87	
1924	Mar. 19, 1924 - Mar 31, 1927	1.180	1.210	1.020	1.120	1.210	.980	.880	.700 3/		880			.700 3/	850	.980	1.080	.720 3/	.815	.700 3/	.04	.0798	.04	.0798	.0289	.0205		2.87	
1928	Dec. 1, 1928 - June 30, 1932	1.020 7/	1.050 7/				.820	.740	.595 3/		.740			.595 3/					.675 7/	.595 3/	.035 PER CUT AND OVER 5 FT.	.035 PER CUT UNDER 5 FT.	.035 PER TON					2.68	
1932	Aug 4, 1932 - Apr 30, 1933	.760 7/	.790 7/				.670 7/	.590	.47 3/		.590			.470 3/					.540 7/	.470 3/	.100 7/	.140 7/	.100 8/					1.92 7/	
1933	May 1, 1933 - Apr 30, 1934	.760 7/	.790 7/				670 7/	.590	.47 3/		.590			470 3/					.540 7/	.470 3/	.100 7/	.140 7/	.100 8/					1.92 7/	
BITUMINOUS COAL CODE																													
1933	Oct. 2, 1933 - Mar. 31, 1934	.760 7/	.790 7/				670 7/	.590	.47 3/					47 3/					.540 7/	470 3/	.100 7/	.140 7/						1.92 7/	
AMENDMENT I		OWL CREEK ONLY																											
1934	Apr. 1, 1934 - Mar 31, 1935	.860 7/	.890				770							.550 3/					.620 7/	.550 3/			.110 8/					2.20	
1935	Oct 1, 1935 - Mar. 31, 1937	.950 7/	.980				.860							.62 3/					.700 7/	.620 3/			.120 8/					2.44	

1/ Source: Wage contracts of United Mine Workers of America

2/ The strike was officially discontinued December 10, 1919. Just when the mines were opened in certain fields is not known - probably ant until December 15 or 16.

a/ Includes mines Dietz, Carney, Monarch, Kooi and Acme

b/ Contract for 3 companies - Sheridan Wyoming Coal Company, Hotchkiss Coal Company, Sheridan Coal Company

c/ Pick pillar coal same rate

d/ Fisher, C. E., and Rasmason, A., Wage Rates and Working Time in the Bituminous Coal Industry, appendix tables

e/ Coal 4 to 5 feet — 4 cents per ton additional (
Under 4 feet — 5 cents per ton additional (applies also to loading
Under 3 feet — deficient work (

f/ Coal 4 to 5 feet — 3 cents per ton additional (
Under 4 feet — 4 cents per ton additional (applies also to loading
Under 3 feet — deficient work (

g/ Rates for rooms (dry). Wet work 2 cents more per ton

h/ Cutting — electric Chain Machine

i/ Rates for rooms (dry). Wet work 4 cents more per ton

j/ Rates for wide work. Narrow work 12 and 16 cents per ton

k/ Rate for wide work. Narrow work 1 cent more per ton

l/ Rate for rooms (dry). Wet work 3 cents more per ton

m/ Estimated -- 14 per cent increase

n/ Rate for wide work. Narrow work 2 cents more per ton

o/ Cannot estimate increase

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TABLE 29

SECTION A

BITUMINOUS COAL INDUSTRY — MONTANA

Hourly and Daily Wage Rates for Trackmen and Outside Common Labor, Daily Rates for Machine Cutters and Helpers and Mechanical Loading Scale[1]

1912 to 1937

Year	Period of Wage Agreement	Hours Worked per day	Trackmen Inside		Common Labor Outside		Machine Cutters	Machine Helpers	Mechanical Loading Scale											
			hourly rates	daily rate	hourly rate	daily rate	daily rate	daily rate	Joy, Goodman Shovel and Similar Machines		Arcwall Undercutter	Shearing & Drilling Machine	Scraper Loader		Small Scraper Loader	Duck Bill	Mining Machine	Shearing Machine	Shoveling onto Conveyors and Conveyor Loaders	Jeffrey Loader
									Operator	Helper	Operator	Operator	Operator	Helper	Operator	Operator	Operator and Helper	Operator and Helper		Combination
1912	Oct 1, 1912 - Sept 30, 1914	8	.475	3.80	.363	2.90	3.90	3.40												
1914	Oct 1, 1914 - Sept 30, 1916	8	.475	3.80	.363	2.90	3.90	3.40												
1916	Oct 1, 1916 - Sept 30, 1918	8	.499	3.99	.381	3.05	4.10	3.57												
1917	June 1, 1917 - Sept 30, 1918	8	.561	4.49	.444	3.55	4.60	4.07												
1917	Nov. 7, 1917 - Sept 30, 1918 extended to Mar. 31, 1920	8	.736	5.89	.619	4.95	6.00	5.47												
1919	Dec. 10, 1919[2] - Mar 31, 1918 "Garfield Award"	8	.838[3]	6.70	.705[3]	5.64	6.84[4]	6.24[4]												
1920	Apr. 1, 1920 - Mar. 31, 1922	8	.861	6.89	.744	5.95	7.00	6.47												
1920	Aug 16, 1920 - Mar. 31, 1922	8	1.049	8.39	.931	7.45	8.50	7.97												
1922	Aug 15, 1922[5] - Mar 31, 1923	8	1.049	8.39	.931	7.45	8.50	7.97												
1923	Apr. 1, 1923 - Mar. 31, 1924	8	1.049	8.39	.931	7.45	8.50	7.97												
1924	Apr. 1, 1924 - Mar 31, 1927	8	1.049	8.39	.931	7.45	8.50	7.97												
1928	Dec. 1, 1928 - June 30, 1932	8	.899	7.19	.800	6.40	7.30	6.77	9.25	8.25	9.25	9.25	9.25	8.25	7.75	8.25	8.75	8.75	7.75	not reported
1932	Aug 1, 1932 - May 31, 1933	8	.725	5.80	.603	4.82	5.86	5.43	7.30	6.80	7.40	7.40	7.30	6.30	6.20	6.60	6.78	6.78	6.20	6.60	6.20
1933	June 1, 1933 - Mar 31, 1934	8	.725	5.80	.603	4.82	5.86	5.43	7.30	6.30	7.40	7.40	7.30	6.30	6.20	6.60	6.78	6.78	6.20	6.60	6.20
Bituminous Coal Code																				
1933	Oct 2, 1933 - Mar 31, 1934	8	.725	5.80	.603	4.82	5.86	5.43	7.30	6.30	7.40	7.40	7.30	6.30	6.20	6.60	6.78	6.78	6.20	6.60	6.20
Amendment 1																				
1934	Apr. 1, 1934 - Mar. 31, 1935	7	.829	5.80	.689	4.82	5.86	5.43	7.30	6.30	7.40	7.40	7.30	6.30	6.20	6.60	6.78	6.78	6.20	6.60	6.20
1935	Oct 1, 1935 - Mar 31, 1937	7	.900	6.30	.760	5.32	6.56	6.13	8.00	7.00	8.10	8.10	8.00	7.00	6.90	7.30	7.48	7.48	6.90	7.30	6.90

1/ Source: Wage contracts of United Mine Workers of America

2/ The strike was officially discontinued December 10, 1919. Just when the mines were opened in certain fields is not known — probably not until December 15 or 16.

3/ Approximate date when agreement went into effect.

4/ Fisher, W. E., and Bezanson, A., Wage Rates and Working Time in the Bituminous Coal Industry, appendix tables.

5/ Estimated -- 14 per cent increase.

TABLE 30

BITUMINOUS COAL INDUSTRY—MONTANA

Tonnage Rates for Pick Mining, and Loading and Rates per Square Foot for Machine Cutting 1/ 1912 to 1937
(Run-of-Mine — Net Tons)

Pick Mining

Year	Period of Wage Agreement	Bear Creek Vein #1	Bear Creek Vein #2 & Sand Coulee	Bear Creek Vein #3 Musselshell County	Bear Creek Veins #4 & 5	Red Lodge Veins #1, [illegible] & 6	Red Lodge Vein #2	Red Lodge Vein #3	Red Lodge Veins #4 & 5	Belt and Conda Copper Mining Co. Mine	Republic Coal Co. Mine #4 Musselshell County 4 to 8 feet	Republic Over 8 ft	Coalville Screened Lump
1912	Oct 1, 1912 - Sept 30, 1914	.83	.78	.73	.88	.77	.69		.66	.78	.83 b/		1.05
1914	Oct 1, 1914 - Sept 30, 1916	.83	.78	.73	.88	.77	.69		.66	.78	.83 b/		1.05
1916	Oct 1, 1916 - Sept 30, 1918	.865	.806	.758	.906	.770	.715		.676	.875	.865 b/		1.070
1917	June 1, 1917 - Sept 30, 1918	.925	.875	.826	.975	.865	.786		.745	.945	.925 b/		1.145
1917	Nov 1, 1917 - Sept 30, 1918 extended to Mar 31, 1920	1.025	.975	.925	1.075	.965	.886	.886	.845	1.045	1.025 c/		
1919	Dec 10, 1919 2/ - Mar 31, 1920 "Garfield Award"	1.135 c/	1.086 c/	1.035 c/	1.226 c/	1.100 c/	1.009 c/	1.009 c/	.963 c/	1.156 c/	1.135 c/		
1920	Apr 1, 1920 - Mar 31, 1922	1.265	1.215	1.165	1.315	1.205	1.125	1.125	1.055	1.285	1.265	1.165	
1920	Aug 16, 1920 - Mar 31, 1922	1.265	1.215	1.165	1.315	1.205	1.155	1.125	1.055	1.265	1.265	1.165	
1922	Aug 16, 1922 3/ - Mar 31, 1923	1.265	1.215	1.165	1.315	1.205	1.125	1.125	1.055	1.285	1.265	1.165	
1923	Apr 1, 1923 - Mar 31, 1924	1.265	1.215	1.165	1.315	1.205	1.125	1.125	1.055	1.285	1.265	1.165	
1924	Apr 1, 1924 - Mar 31, 1927	1.265	1.215	1.165	1.315	1.205	1.125	1.125	1.055	1.265	1.265	1.165	
1928	Oct 1, 1928 - June 30, 1932		1.055	1.005		.96 / 1.045	1.055	.965	.85 / .925		1.105	1.005	
1932	Aug 11, 1932 - May 31, 1933			.826 a/									
1933	June 1, 1933 - May 31, 1934			.826 a/									
Bituminous Coal Code													
1933	Oct 2, 1933 - Mar 31, 1934			.826 a/									
Amendment 1													
1934	Apr 1, 1934 - Mar 31, 1935			.926 a/									
1935	Oct 1, 1935 - Mar 31, 1937			1.016 a/									

Loading (After Machines)

Year	Period of Wage Agreement	Bear Creek Veins #5 Under 15 ft (Loading, Shooting, Drilling)	Bear Creek Veins #5 15 ft and over	Bear Creek Vein #2 Under 12 ft	Bear Creek Vein #2 Over 12 ft	Bear Creek Vein #3 Musselshell County Under 12 ft	Bear Creek Vein #3 Over 12 ft	Sand Coulee Loading by Day	Sand Coulee Loading, Shooting, Timbering after Chain Machine	Republic Coal Co. Mine #4 Musselshell County 12 ft or less	Republic Over 12 ft	Coalville Screened Co. Shearing	Coalville Screened Co. Undercutting	Tracy Lochray Mine and Sand Coulee Brown Mine Loading, Shooting, Timbering Wide Work	Lehigh Loading, Shooting, Timbering, Drilling and Tracklaying Wide Work
1912	Oct 1, 1912 - Sept 30, 1914			.57	.5125	.53	.475	.26		.60	.555	.95	.90		
1914	Oct 1, 1914 - Sept 30, 1916			.57	.5125	.53	.475	.26		.60	.555	.95	.90	.425	
1916	Oct 1, 1916 - Sept 30, 1918			.595	.5375	.555	.500	.285		.625	.57	1.005	.925	.49	.500
1917	June 1, 1917 - Sept 30, 1918			.66	.6025	.62	.565	.315		.69	.655			.55	.565
1917	Nov 1, 1917 - Sept 30, 1918 extended to Mar 31, 1920			.7575	.6925	.7175	.665	.405		.785	.745			.65	.665
1919	Dec 10, 1919 2/ - Mar 31, 1920 "Garfield Award"			.860 c/	.764 b/	.818 c/	.777 b/	.491 b/		.896 c/	.859 c/			.70 c/	.747 c/
1920	Apr 1, 1920 - Mar 31, 1922	1.09	.99	.99	.9125	.95	.875	.55	.92	1.02	.97			.815	.875
1920	Aug 16, 1920 - Mar 31, 1922	1.09	.99	.99	.9125	.95	.875	.55	.92	1.02	.97			.815	
1922	Aug 16, 1922 3/ - Mar 31, 1923	1.09	.99	.99	.9125	.95	.875	.55	.92	1.02	.97			.815	
1923	Apr 1, 1923 - Mar 31, 1924	1.09	.99	.99	.9125	.95	.875	.55	.92	1.02	.97			.815	
1924	Apr 1, 1924 - Mar 31, 1927	1.09	.99	.99	.9125	.95	.875	.55	.92	1.02	.97			.815	
1928	Oct 1, 1928 - June 30, 1932			.837	.775	.7975	.7375	.45	.784	.87	.82				
1932	Aug 11, 1932 - May 31, 1933					.656 b/	.6075								
1933	June 1, 1933 - May 31, 1934					.656 b/	.6075								
Bituminous Coal Code															
1933	Oct 2, 1933 - Mar 31, 1934					.656 b/	.6075								
Amendment 1															
1934	Apr 1, 1934 - Mar 31, 1935					.7392 a/	.6875								
1935	Oct 1, 1935 - Mar 31, 1937					.8243 b/	.7675								

Machine Cutting (Per Square Foot)

Year	Period of Wage Agreement	Bear Creek Vein #5 Under 15 ft	Bear Creek Vein #5 15 ft and over	Bear Creek Vein #2 Under 12 ft	Bear Creek Vein #2 12 ft [and over]	Bear Creek Vein #3 Musselshell Co. Under 12 ft	Bear Creek Vein #3 Over 12 ft	Sand Coulee Cutters Under 12 ft	Sand Coulee Cutters Over 12 ft	Sand Coulee Helpers Under 12 ft	Sand Coulee Helpers Over 12 ft	Sand Coulee Electric Chain Machine Wide Work	Republic Coal Co. Mine #4 Musselshell Co. 12 ft or less	Republic Over 12 ft	Tracy–Lochray Mine, Sand Coulee–Brown Mine Cutters Wide Work	Tracy–Lochray Mine, Sand Coulee–Brown Mine Helpers Wide Work	Lehigh Under 12 ft	Lehigh 12 ft or more
1912	Oct 1, 1912 - Sept 30, 1914			.045	.03	.0435	.0375	.025	.0205	.0255	.015		.0375	.0175				
1914	Oct 1, 1914 - Sept 30, 1916			.045	.03	.0435	.0375	.0315	.0205	.0255	.015		.0370	.0175	.025	.022		
1916	Oct 1, 1916 - Sept 30, 1918			.045	.03	.0435	.0375	.0315	.0205	.0255	.015		.0375	.0175	.026	.022	.04	.02
1917	June 1, 1917 - Sept 30, 1918			.0485	.0325	.0489	.0389	.0336	.0226	.0276	.02		.0389	.0189	.027	.024	.0414	.0214
1917	Nov 1, 1917 - Sept 30, 1918 extended to Mar 31, 1920			.0551	.0374	.0556	.0414	.0389	.0263	.0328	.0237		.0444	.0214	.0306	.0277	.0464	.0287
1919	Dec 10, 1919 2/ - Mar 31, 1920 "Garfield Award"			g/	g/	g/	.0374 b/	g/	g/	g/	g/		g/	g/	g/	g/	g/	g/
1920	Apr 1, 1920 - Mar 31, 1922	.0566	.0360	.0595	.0394	.0570	.0364	.0516	.0365	.0431	.0325	.04	.05275	.02515	.0355	.0327	.0515	.0289
1920	Aug 16, 1920 - Mar 31, 1922	.0566	.0360	.0595	.0394	.0570	.0364	.0516	.0365	.0431	.0325	.04	.05275	.02515	.0355	.0327		
1922	Aug 16, 1922 3/ - Mar 31, 1923	.0566	.0360	.0595	.0394	.0570	.0364	.0516	.0365	.0431	.0325	.04	.05275	.02515	.0355	.0327		
1923	Apr 1, 1923 - Mar 31, 1924	.0536	.0360	.0595	.0394	.0570	.0364	.0516	.0365	.0431	.0325	.04	.05275	.02515	.0355	.0327		
1924	Apr 1, 1924 - Mar 31, 1927	.0566	.0360	.0595	.0394	.0570	.0364	.0516	.0365	.0431	.0325	.04	.05275	.02515	.0355	.0327		
1928	Oct 1, 1928 - June 30, 1932			.0477	.0322	.0472	.0287	.0420	.0298	.0381	.0275	.030	.0421	.0200				
1932	Aug 11, 1932 - May 31, 1933					.0389 a/	.0283											
1933	June 1, 1933 - May 31, 1934					.0358 b/	.0253											
Bituminous Coal Code																		
1933	Oct 2, 1933 - Mar 31, 1934					.0383 a/	.0253											
Amendment 1																		
1934	Apr 1, 1934 - Mar 31, 1935					.0440 a/	.0278											
1935	Oct 1, 1935 - Mar 31, 1937					.0453 a/	.0303											

1/ Source: Wage Contracts of United Mine Workers of America
2/ The strike was officially discontinued December 10, 1919. Just when the mines were opened in certain fields is not known — probably not until December 15 or 16
3/ Approximate date when agreement went into effect

a/ Rate for Eagle Coal Company, Sand Creek, only
b/ Fisher, W. E., and Bezanson, A., Wage Rates and Working Time in the Bituminous Coal Industry, appendix tables
c/ Estimated — 14 per cent increase. This increase probably greater than was actually in effect for pick mining and less for loading. The fields for which the Coal Commission and actual data (see footnote b/) show an approximate 11 per cent increase for pick mining and more than 17 per cent for loading
d/ Loading only, 53½ cents — these rates for Eagle Coal Company, Bear Creek
e/ Loading only, 61½ cents — these rates for Eagle Coal Company, Bear Creek
f/ Wet work 1 cent more per ton
g/ The increase granted to cutters and helpers under the "Garfield Award" is not known
h/ Loading only, 68½ cents—these rates for Eagle Coal Co., Bear Creek

Note: Pick Mining Rates
Washoe has same rate as Bear Creek Veins # 1, 2 and 3
Tracy, Lochray Mine, has same rate as Bear Creek Vein # 2
Roundup, Republic Coal Company, Klein, has same rate as Bear Creek # 3
Davis Coal Company has same rate as Bear Creek # 1, 2 and 3
Roundup Coal Mining Company, Mine # 3, has same rate as Sand Creek # 3
Carpenter Creek, Roundup Coal Mining Company, Mine # 5, and Northwestern Mining and Fuel Company mines have same rate as Bear Creek # 3
Pearce Mine, has same rate as Bear Creek # 2

Note: Loading Rates
Washoe has same rate as Bear Creek # 3
Stockett has same rate as Sand Coulee
Roundup, Roundup Coal Company Mine # 3 has same rate as Republic Coal Company's Mine # 4 and Klein
Carpenter Creek, Roundup Coal Company Mine # 5 and Northwestern Mining & Fuel Company same rate as Republic Coal Company's Mine # 4
A.C.M. Company # 4 Mine has same rate as Sand Coulee for loading after Chain Machine
Pearce Mine has same rate as Tracy for loading, shooting and timbering and Sand Coulee rate for loading after Chain Machine

Note: Machine Cutting
Washoe has same rate as Sand Creek # 3
Stockett has same rate as Sand Coulee
Roundup, Roundup Coal Mining Company has same rate as Republic Coal Company's Mine # 4
Carpenter Creek, Roundup Coal Mining Company's Mine # 5 and Northwestern Mining & Fuel Company have same rate as Republic Coal Company's Mine # 4
A.C.M. Company # 4 Mine has same rate as Sand Coulee for Electric Chain Machine Cutting
Pearce Mine has same rate as Tracy for cutting wide work and Sand Coulee rate for electric Chain Machine cutting.

Comparison of Average Working Days, Mine Labor Cost, Total Cost, and Realization for January thru March 1934 and April 1934 thru January 1935

	3 Months Jan.-Feb.-March '34 Per Ton	10 Months April 1934 - Jan. 1935 Per Ton	Increase Under Amend I Per Ton	Increase Under Amend I Per Cent
DIVISION I				
EASTERN SUBDIVISION 1/				
Avg. Working Days	19.3	15.2		
Total Avg. Working Days	57.9	151.7		
Mine Labor Costs	1.0650	1.2950	.2300	21.6
Total Cost	1.7134	2.1218	.4084	23.8
Realization	1.7268	2.0570	.3302	19.1
WESTERN PENNA.				
Avg. Working Days	19.4	16.5		
Total Avg. Working Days	57.8	166.7		
Mine Labor Costs	.9879	1.1901	.2022	20.5
Total Cost	1.4413	1.9408	.2995	18.2
Realization	1.6732	1.9085	.2353	14.1
OHIO				
Avg. Working Days	19.0	13.9		
Total Avg. Working Days	56.8	138.0		
Mine Labor Costs	.9483	1.1517	.2034	21.4
Total Cost	1.5049	1.8031	.2982	19.8
Realization	1.6892	1.8584	.1692	10.0
MICHIGAN				
Avg. Working Days	20.7	16.4		
Total Avg. Working Days	62.0	164.3		
Mine Labor Costs	1.5534	1.9308	.3774	24.3
Total Cost	2.7158	3.1848	.4690	17.3
Realization	2.9112	3.1625	.2513	8.6
PANHANDLE				
Avg. Working Days	a/ 21.0	18.4		
Total Avg. Working Days	42.0	184.2		
Mine Labor Costs	1.0110	1.1281	.1171	11.6
Total Cost	1.7226	1.7272	b/ .0046	b/ 00.27
Realization	1.6103	1.7542	.1439	8.9
NORTHERN W. VIRGINIA				
Avg. Working Days	19.0	13.5		
Total Avg. Working Days	58.5	133.6		
Mine Labor Costs	.7748	.9957	.2209	28.5
Total Cost	1.3248	1.6671	.3423	25.8
Realization	1.3467	1.6214	.2747	20.4
TOTAL DIV. I - NORTH 2/				
Avg. Working Days	19.3	15.3		
Total Avg. Working Days	57.1	152.1		
Mine Labor Costs	.9730	1.1858	.2128	21.9
Total Cost	1.5966	1.9296	.3330	20.9
Realization	1.6439	1.9004	.2565	15.6

1/ Exclusive of Maryland and Upper Potomac.

2/ Includes Grant, Mineral and Tucker Counties, West Virginia.

	3 Months Jan.-Feb.-March '34 Per Ton	10 Months April 1934 - Jan. 1935 Per Ton	Increase Under Amend I Per Ton	Increase Under Amend I Per Cent
SOUTHERN NO. 1				
	20.5	18.3		
	61.3	182.6		
	.9389	1.1459	.2070	22.0
	1.6315	1.9473	.3158	19.4
	1.7754	2.0369	.2615	14.7
SOUTHERN NO. 2				
	18.2	15.1		
	54.7	150.9		
	.8698	1.0884	.2186	25.1
	1.5173	1.8199	.3026	19.9
	1.5809	1.8447	.2638	16.7
WESTERN KENTUCKY				
	c/ 16.8			
	16.8	c/		
	.7065			
	1.1709			
	1.1998			
MARYLAND AND UPPER POTOMAC 2/				
	20.2	14.6		
	60.5	145.8		
	1.1071	1.3214	.2143	19.4
	1.7049	2.0672	.3623	21.3
	1.7841	2.1076	.3235	18.1
TOTAL DIV. I-SOUTH 4/ d/				
	19.2	16.4		
	57.5	163.6		
	.9053	1.1192	.2139	23.6
	1.5713	1.8829	.3116	19.8
	1.6703	1.9377	.2674	16.0
TOTAL DIVISION I d/				
	19.2	15.8		
	57.3	157.8		
	.9397	1.1519	.2122	22.6
	1.5842	1.9058	.3216	20.3
	1.6569	1.9194	.2625	15.8

3/ DIVISION I NORTH Includes:
Eastern Subdivision (excluding Maryland and Upper Potomac)
Western Pennsylvania
Ohio
Michigan
Panhandle, West Virginia
Northern West Virginia

4/ DIVISION I SOUTH Includes:
Southern Subdivision No. 1
Southern Subdivision No. 2
Maryland
Upper Potomac (Grant, Mineral & Tucker Counties, West Virginia)
Western Kentucky

	3 Months Jan.-Feb.-March '34 Per Ton	10 Months April 1934 - Jan. 1935 Per Ton	Increase Under Amend I Per Ton	Increase Under Amend I Per Cent
DIVISION II				
INDIANA e/				
	17.7	14.9		
	53.2	148.5		
	.5906	.7191	.1285	21.8
	1.2505	1.5203	.2698	21.6
	1.4410	1.5985	.1575	10.9
ILLINOIS e/				
	16.8	14.9		
	50.5	145.6		
	.7715	.8663	.0948	12.3
	1.3546	1.5531	.1985	14.7
	1.5372	1.6396	.1024	6.7
TOTAL DIVISION II e/f/				
	17.1	14.9		
	51.2	146.4		
	.7245	.8291	.1046	14.4
	1.3275	1.5448	.2173	16.4
	1.5122	1.6292	.1170	7.7
DIVISION III				
ALABAMA				
	15.1	g/ 14.8		
	45.3	132.0		
	1.1012	1.4110	h/ .3098	h/ 28.1
	1.9184	2.3202	.4018	20.9
	1.9533	2.2867	.3334	17.1
SO. TENNESSEE AND GEORGIA				
	18.9	h/ 16.2		
	56.7	125.5		
	1.1883	1.4261	i/ .2378	j/ 20.0
	1.8054	2.1545	.3491	19.3
	1.8812	2.0376	.1564	8.3
TOTAL DIVISION III				
	15.5	g/ 14.9		
	46.7	131.1		
	1.1136	1.4130	k/ .2994	k/ 26.9
	1.9022	2.2983	.3961	20.8
	1.9430	2.2539	.3109	16.0

a/ Two-month total. Data not available for March 1934.
b/ Increase 10 months over two months.
c/ W. Kentucky is shown only for January. Not available for succeeding months.
d/ Does not include Western Kentucky.
e/ Deep and strip combined.
f/ Does not include Iowa.
g/ Nine-month total. Data not available for January, 1935.
h/ So. Tennessee & Georgia - Dist. 1 covers only 6 months and Dist. 2 only 7 months due to insufficient data.
i/ Increase 9 months over 3 months.
j/ Increase 8 months over 3 months.

LABOR COSTS PER TON BEFORE AND AFTER APRIL 1, 1934 – BITUMINOUS COAL

Prepared by Bituminous Coal Section
Division of Review - ...
under the supervision of ... Berquist

FORM A ITEM NO.	DIVISION AND SUBDIVISION	NOVEMBER 1933	DECEMBER 1933	JANUARY 1934	FEBRUARY 1934	MARCH 1934	TOTAL 3 MONTHS JAN. FEB. AND MAR 1934	APRIL 1934	MAY 1934	JUNE 1934	JULY 1934	AUGUST 1934	SEPT 1934	OCTOBER 1934	NOVEMBER 1934	DECEMBER 1934	JANUARY 1935	10 MONTH TOTAL APRIL 1934 THROUGH JAN 1934	% INCREASE OF LABOR COST 10 MONTH SUMMARY OVER JAN. FEB. MAR 1934
	EASTERN SUBDIVISION 1/																		
5a	DAYMEN	.2711	2922	2843	.2869	2645	2776	.3581	3502	.3533	.3524	.3531	3576	3544	.3552	.3558	.3485	3537	2741
5b	MINING (PIECE AND DAY WORKERS)	.6221	6031	6103	6120	6245	6162	7167	7144	.7150	7118	.7125	7128	7188	.7213	7250	.7297	.7184	1659
5c	YARDAGE AND DEADWORK	.0939	0999	1020	.1014	0992	.1007	1313	.1229	1253	1262	.1271	1286	1215	1264	.1241	.1255	.1257	2483
5d	MINE SUPER AND CLERICAL	.0727	0783	0729	0731	0663	0705	1046	1050	.1101	1072	1000	1065	0878	.0903	.0897	0818	0972	2787
5e	TOTAL MINE LABOR	10598	1.0735	1.0695	1.0734	1.0545	1.0650	13107	12925	13037	1.2976	12927	13055	12825	12932	1.2946	1.2855	12950	2160
	No OF MINES REPORTING	139	152	159	157	160	159	138	140	130	125	129	130	139	138	137	144	135	
	No OF DAYS TIPPLE STARTED	163	170	189	181	209	579	145	143	132	138	145	134	169	163	163	184	1517	
	TOTAL TONS PRODUCED	2032149	2120921	2420246	2400151	2921507	7741904	1720097	1791423	1643473	1671331	1808787	1673880	2172570	2016291	2063995	2364567	18926414	
	WESTERN PENNSYLVANIA																		
5a	DAYMEN	3109	3235	.3288	3229	.3199	.3233	4178	4080	4000	.4085	4003	4089	.3915	.3879	3932	.3811	3992	2348
5b	MINING (PIECE AND DAY WORKERS)	5725	.5704	.5618	5649	5633	5634	6581	6537	6652	6675	6695	6719	67.9	.6782	.6726	.6754	6686	1867
5c	YARDAGE AND DEADWORK	0472	0480	.0461	0471	.0472	0469	0595	0554	0577	0561	0541	0606	0546	0568	0575	.0555	.0567	2090
5d	MINE SUPER. AND CLERICAL	0508	.0629	0599	.0580	.0480	0543	0718	0629	0668	0682	0623	0670	0596	.0641	0717	.0642	0656	2081
5e	TOTAL MINE LABOR	9814	10048	.9966	.9929	.9784	9879	12072	1.1800	11897	12003	1.1862	12084	11776	1.1870	11950	11762	1.1901	2047
	No. OF MINES REPORTING	152	150	128	133	154	138	150	134	142	138	149	149	155	149	149	159	148	
	No. OF DAYS TIPPLE STARTED	194	169	17.6	186	216	578	163	174	162	159	169	158	18.1	16.3	15.1	172	1647	
	TOTAL TONS PRODUCED	3415328	2750423	2531106	2706380	3774513	9011999	2467493	2630471	2496882	2397245	2819372	2571423	3068651	2745793	2369995	2886979	26454244	
	OHIO																		
5a	DAYMEN	.2708	2773	.2496	2689	2693	2634	3821	3629	3458	.3441	3454	3664	.3496	3605	3445	3340	.3521	3368
5b	MINING (PIECE AND DAY WORKERS)	5964	5869	6.169	.5871	.5892	5967	6726	6739	6729	6677	6676	6698	6983	6909	6956	6937	6819	1428
5c	YARDAGE AND DEADWORK	0423	0372	0385	0402	.0414	.0402	0485	0508	0429	0504	0532	.0539	0580	0582	.0605	0590	0543	3507
5d	MINE SUPER. AND CLERICAL	.0561	0579	.0517	0490	.0447	.0480	0800	0729	0691	0674	0671	0767	.0557	0572	0541	0494	.0634	3208
5e	TOTAL MINE LABOR	.9656	9593	.9567	9452	.9446	.9483	11832	11605	11307	1.1296	1.1333	11668	1.1616	1.1668	1.1547	11361	11517	2145
	No OF MINES REPORTING	60	56	54	52	65	57	53	52	55	54	56	58	64	65	57	56	57	
	No OF DAYS TIPPLE STARTED	159	154	171	184	213	568	122	132	136	132	136	117	145	147	150	170	1380	
	TOTAL TONS PRODUCED	1065055	1023459	1106128	1125700	1524201	3756029	743875	763609	834565	887607	1014993	855201	1095785	1130948	1140412	1227876	9694871	
	MICHIGAN																		
5a	DAYMEN	.3542	3928	.3807	.4113	4134	3999	6542	6991	.7981	6723	.6935	6046	5583	5417	.5176	5369	5862	4659
5b	MINING (PIECE AND DAY WORKERS)	.9031	8925	8648	8576	8498	8599	9743	9106	10288	9725	9941	10309	9531	9510	.9631	.9633	9688	1266
5c	YARDAGE AND DEADWORK	2426	2589	2311	.2342	2235	2296	.3029	3001	3251	3319	3285	3374	2903	2754	2633	2705	2905	2652
5d	MINE SUPER AND CLERICAL	0718	0736	0636	0734	0562	0640	.1081	1315	1609	1292	0958	0843	0651	0637	0793	0736	0853	3328
5e	TOTAL MINE LABOR	15717	16178	15452	15765	15429	15534	20395	20413	23129	21059	2.1119	20572	18668	1.8318	18233	18443	1.9308	2430
	No. OF MINES REPORTING	5	6	6	5	4	5	6	4	4	3	4	4	5	5	5	5	5	
	No OF DAYS TIPPLE STARTED	186	186	21.7	183	220	620	139	76	72	123	198	183	213	207	21.0	222	1643	
	TOTAL TONS PRODUCED	59552	62644	71004	51934	57651	180589	34532	15053	12435	12372	23932	26538	48330	52148	58189	63656	347185	

1/ EXCLUDING MARYLAND AND UPPER POTOMAC

9837

LABOR COSTS PER TON BEFORE AND AFTER APRIL 1, 1934 – BITUMINOUS COAL

Prepared by Bituminous Coal Section [illegible]

FORM A ITEM NO. / DIVISION AND SUBDIVISION	NOVEMBER 1933	DECEMBER 1933	JANUARY 1934	FEBRUARY 1934	MARCH 1934	TOTAL 3 MONTHS JAN FEB AND MAR 1934	APRIL 1934	MAY 1934	JUNE 1934	JULY 1934	AUGUST 1934	SEPT 1934	OCTOBER 1934	NOVEMBER 1934	DECEMBER 1934	JANUARY 1935	10 MONTH TOTAL APRIL 1934 THROUGH JAN 1935	% INCREASE OF LABOR COST 10 MONTHS SUMMARY OVER JAN FEB MAR 1934
PANHANDLE																		
5a DAYMEN	2493	.2452	2619	2826	DATA	b/ 2714	3239	2011	2648	2734	2915	3181	2917	3031	2954	2957	2953	c/ 181
5b MINING (PIECE AND DAY WORKERS)	.6009	6081	.6085	.6104	NOT	6094	6866	6842	6783	6869	6853	6847	6830	6854	6833	6843	6842	1227
5c YARDAGE AND DEADWORK	.0763	.0692	.0710	.0772	AVAILABLE	0734	.0895	.0971	.0830	.0918	0868	1116	1029	1175	1105	1079	0985	3239
5d MINE SUPER AND CLERICAL	.0433	.0488	.0525	.0607		0563	.0460	.0500	.0462	0479	0426	0705	0475	0560	0555	0495	0501	(1120)
5e TOTAL MINE LABOR	9698	.9713	9939	10307		10110	11460	11324	10767	11005	10990	11848	11351	11620	11452	11374	11281	1158
NO. OF MINES REPORTING	7	8	5	5		5	6	6	6	5	5	5	5	5	5	5	5	
NO. OF DAYS TIPPLE STARTED	18.6	209	216	204		420	198	180	197	215	211	133	207	161	156	185	1862	
TOTAL TONS PRODUCED	245861	202328	98430	15803		184233	216023	212879	225870	220310	222275	121916	203116	171208	169252	194598	1965478	
NORTHERN WEST VIRGINIA																		
5a DAYMEN	.2519	.2398	.2493	.2415	.2471	.2458	.3928	.3188	.3240	.3372	.3456	.3472	.3386	.3309	.3319	.3322	.3307	3535
5b MINING (PIECE AND DAY WORKERS)	.4596	.4594	.4588	.4577	.4600	.4589	.5744	.5632	.5682	.5657	.5602	.5685	.5694	.5675	.5817	.5767	.5694	2408
5c YARDAGE AND DEADWORK	.0141	.0152	.0164	.0192	.0171	.0176	.0366	.0220	.0210	.019	.0235	.0220	.0250	.0251	.0248	.0240	.0237	3466
5d MINE SUPER. AND CLERICAL	.0486	.0612	.0540	.0538	.0501	.0525	.1294	.0570	.0650	.0704	.0734	.0695	.0690	.0683	.0700	.0571	.0699	3324
5e TOTAL MINE LABOR	.7742	.7756	.7785	.7722	.7743	.7748	11332	.9626	.9729	.9928	10037	10076	.9926	.9918	10026	.9800	.9957	2851
NO. OF MINES REPORTING	65	69	59	69	65	64	69	62	59	51	56	57	59	59	64	64	58	
NO. OF DAYS TIPPLE STARTED	176	169	178	179	212	555	68	167	155	142	29	113	136	135	132	157	1336	
TOTAL TONS PRODUCED	1325238	1391968	1301156	1467013	1595062	4367231	382551	1303050	[illegible]	1030164	422421	903727	1141649	1117196	1093181	1277404	[illegible]	
AVERAGE DIV. I - NORTH d/																		
5a DAYMEN	.2846	.2915	.2887	.2890	.2844	.2871	.3467	.3674	.3640	.3653	.3640	.3790	.3665	.3648	.3613	.3540	.3674	2797
5b MINING (PIECE AND DAY WORKERS)	.5730	.5650	.5712	.5649	.5704	.5689	.6755	.6562	.6621	.6637	.6661	.6693	.6757	.6772	.6806	.6810	.6711	1796
5c YARDAGE AND DEADWORK	.0551	.0574	.0599	.0591	.0579	.0589	.0813	.0685	.0678	.0687	.0706	.0748	[illegible]	.0746	.0757	.0747	.0729	2377
5d MINE SUPER. AND CLERICAL	.0565	.0660	.0618	.0607	.0533	.0581	.0862	.0734	.0774	.0780	.0740	.0811	.0681	.0768	.0763	.0657	.0744	2806
5e TOTAL MINE LABOR	.9692	.9799	.9816	.9737	.9660	.9730	12337	11660	11793	11800	11797	12142	11807	11874	11917	11754	11858	2187
NO. OF MINES REPORTING	428	441	411	431	448	438	462	348	346	376	394	403	427	431	417	433	408	
NO. OF DAYS TIPPLE STARTED	17.7	168	181	183	213	571	139	158	140	147	151	126	155	156	151	173	1524	
TOTAL TONS PRODUCED	8143183	7551743	7528070	7836981	9976934	25341985	5564511	6716485	6640647	6227984	6616780	6152445	7730181	7233514	6895630	8020810	67852307	
SOUTHERN NO. 1																		
5a DAYMEN	3576	.3685	.3669	.3706	.3805	.3730	.4687	.4643	←			a/ .4670		→	.4791	.4655	.4680	2547
5b MINING (PIECE AND DAY WORKERS)	.4389	.4418	.4409	.4322	.4354	.4362	.5224	.5190				.5230			.5248	.5215	.5220	1967
5c YARDAGE AND DEADWORK	.0563	.0589	.0638	.0628	.0622	.0629	.0748	.0712				.0800			.0835	.0834	.0795	2634
5d MINE SUPER. AND CLERICAL	.0883	.0905	.0697	.0696	.0610	.0668	.0779	.0734				.0763			.0833	.0721	.0764	1437
5e TOTAL MINE LABOR	9411	.9597	.9413	9352	.9400	.9389	11438	11277				11462			11707	11060	11459	2205
NO. OF MINES REPORTING	143	139	153	154	160	156	155	155				164			153	153	156	
NO. OF DAYS TIPPLE STARTED	17.1	159	200	193	22.1	613	186	199				1046			155	186	1821	
TOTAL TONS PRODUCED	2583294	2641348	2436984	3338605	3871963	10647552	3076524	3463603				9358601			2916615	3178913	22241256	

a/ A 6-month average is shown for Southern No. 1 for the months of June through November, 1934. Data not available for separate months.

b/ Total for two months only.

c/ Increase of ten months over two months.

Figure in parenthesis denotes decrease.

d/ [illegible] Includes

Eastern Subdivision — Excluding Maryland and Upper Potomac.
Western Pennsylvania
Ohio
Michigan
Panhandle, West Virginia
Northern West Virginia

LABOR COSTS PER TON BEFORE AND AFTER APRIL 1, 1934 – BITUMINOUS COAL

FORM A ITEM NO.	DIVISION AND SUBDIVISION	NOVEMBER 1933	DECEMBER 1933	JANUARY 1934	FEBRUARY 1934	MARCH 1934	TOTAL 3 MONTHS JAN, FEB & MAR 1934	APRIL 1934	MAY 1934	JUNE 1934	JULY 1934	AUGUST 1934	SEPT 1934	OCTOBER 1934	NOVEMBER 1934	DECEMBER	JANUARY	10 MONTH TOTAL APRIL 1934 THROUGH JAN. 1935	INCREASE OF LABOR COST (10 MONTHS' SUMMARY OVER JAN, FEB MAR 1934
	SOUTHERN NO. 2																		
5a	DAYMEN	3176	3193	3166	.3099	3232	.3171	.3185	.3070	.3151			a/ .3094			.3172	.3193	.3111	.2964
5b	MINING (PIECE & DAY WORKERS)	4597	4569	.4506	.4518	4589	4501	.5373	5467	5409			5449			.5328	.5508	5461	2133
5c	YARDAGE & DEADWORK	0377	.0345	.0371	.0398	.0383	.0384	0484	0513	.0543			0586			0543	0576	0576	0200
5d	MINE SUPER. & CLERICAL	.0682	.0804	.0705	0661	.0577	0642	0788	0729	.0785			0736			0777	0705	0736	1464
5e	TOTAL MINE LABOR	8832	8911	8748	8671	8681	8698	.10830	.10779	.10888			.10865			.11020	.10922	.10884	2513
	NO. OF MINES REPORTING	296	266	234	235	248	239	241	213	192			208			208	210	208	
	NO OF DAYS TIPPLE STARTED	160	141	162	177	207	547	159	171	148			1191			150	168	1509	
	TOTAL TONS PRODUCED	4510893	3655808	4013956	4104491	5093913	13212360	3653029	3544992	2935329			29966877			3225534	3463254	36835665	
	MARYLAND																		
5a	DAYMEN	4154	.4024	.3327	3223	.3240	.3268	.3065	3638	4535	4495	4314	4277	.4404	.4460	3845	3927	4117	2598
5b	MINING (PIECE & DAY WORKERS)	6080	.5613	6254	6245	6161	6220	.7839	7045	6772	6758	6782	6922	6916	6894	7527	.7297	.7093	1404
5c	YARDAGE & DEADWORK	.0651	.0820	.0829	0709	0746	0767	.1598	1205	0869	0869	0835	0777	.0656	.0668	.0758	.0745	0848	1056
5d	MINE SUPER. & CLERICAL	0629	.0839	.0789	.0939	0794	0834	.1432	1681	1837	1526	1566	.1358	.1116	.1080	.0992	1004	1280	5348
5e	TOTAL MINE LABOR	1.1514	1.1296	1.1199	1.1116	1.0941	1.1089	13934	13569	14013	13648	13497	13335	13092	13102	13122	12997	13338	2028
	NO. OF MINES REPORTING	14	16	16	12	11	13	10	10	12	13	13	12	12	13	13	12	12	
	NO. OF DAYS TIPPLE STARTED	163	202	206	189	212	607	120	97	79	110	112	124	153	160	189	199	1243	
	TOTAL TONS PRODUCED	93408	124074	130381	100582	115461	346436	48423	47696	45269	63486	64342	64740	87162	89304	103389	105714	720125	
	UPPER POTOMAC																		
5a	DAYMEN	3884	.3857	.3333	.3333	3470	3388	4374	.4065	3973	3991	3931	.4612	4163	4211	4159	4271	.4168	2302
5b	MINING (PIECE & DAY WORKERS)	5881	6028	.6025	.5815	6002	5964	6877	6981	6735	7110	6864	6775	6912	6932	6889	6909	6907	1581
5c	YARDAGE & DEADWORK	.1042	.1088	.1006	.1198	.1126	1102	1355	.1154	.1239	0936	1069	.1332	.1144	.1161	.1143	.1124	1262	1452
5d	MINE SUPER. & CLERICAL	0545	0726	.0659	.0575	0528	0586	0806	0816	.0771	0819	0637	0764	0640	0696	0779	0684	.0729	2440
5e	TOTAL MINE LABOR	1.1352	1.1699	1.1023	1.0921	1.1126	1.1040	13412	13016	12718	12856	12516	13463	12859	13300	13290	13288	13066	1835
	NO. OF MINES REPORTING	11	10	11	6	11	9	8	10	8	10	9	8	9	10	9	10	9	
	NO OF DAYS TIPPLE STARTED	176	169	194	187	220	601	166	144	132	138	170	143	186	179	179	189	1624	
	TOTAL TONS PRODUCED	62550	57279	70729	48851	81251	200831	48355	52201	43161	56715	69628	46832	74518	71422	66522	73212	602566	
	WESTERN KENTUCKY																		
5a	DAYMEN	2759	.2584																
5b	MINING (PIECE & DAY WORKERS)	3988	.3972																
5c	YARDAGE & DEADWORK	0034	.0038	b/															
5d	MINE SUPER. & CLERICAL	0487	.0488																
5e	TOTAL MINE LABOR	7268	.7082																
	NO OF MINES REPORTING	27	29																
	NO. OF DAYS TIPPLE STARTED	139	151																
	TOTAL TONS PRODUCED	41452	49583																

a/ 6-month average is shown for Southern No. 2 for the months of April through November, 1934. Data not available for separate months.

b/ Western Kentucky is not shown for 1934, as it reported only in January.

Prepared by Bituminous Coal Section
Division of Study - N.R.A.
Under the Supervision of F. L. Herquist

LABOR COSTS PER TON BEFORE AND AFTER APRIL 1, 1934 - BITUMINOUS COAL

FORM A ITEM NO.	DIVISION AND SUBDIVISION	NOVEMBER 1933	DECEMBER 1933	JANUARY 1934	FEBRUARY 1934	MARCH 1934	TOTAL 3 MONTHS JAN FEB & MAR 1934	APRIL 1934	MAY 1934	JUNE 1934	JULY 1934	AUGUST 1934	SEPT 1934	OCTOBER 1934	NOVEMBER 1934	DECEMBER 1934	JANUARY 1935	10 MONTH TOTAL APRIL 1934 THROUGH JAN 1935	INCREASE OF LABOR COST 10 MONTH SUMMARY OVER JAN FEB MAR 1934
	AVERAGE DIV. I - SOUTH a/																		
	5a DAYMEN	.3306	.3356	.3397	.3369	.3476	.3418	.4044	.4346							.4452	.4410	.4374	.4259
	5b MINING (PIECE & DAY WORKERS)	.4522	.4500	.4506	.4460	.4466	.4477	.5334	.5354							.5446	.5408	.5380	.2038
	5c YARDAGE & DEADWORK	.0430	.0430	.0505	.0568	.0496	.0502	.0617	.0619				(TITLE)			.0691	.0693	.0685	.3846
	5d MINE SUPER. & CLERICAL	.0738	.0820	.0702	.0680	.0597	.0656	.0789	.0738							.0807	.0722	.0765	.1598
	5e TOTAL MINE LABOR	.8996	.9106	.9110	.9017	.9035	.9053	1.1144	1.1057							1.1396	1.1223	1.1192	.2116
	NO OF MINES REPORTING	491	460	414	407	430	417	414	388										
	NO OF DAYS TIPPLE STARTED	162	149	178	184	213	575	170	182							383	385	385	
	TOTAL TONS PRODUCED	7664687	6973943	7652050	7592531	9162588	24407169	6826331	7108492							153	177	1636	
	TOTAL - DIVISION I a/															63.2060	73.01093	7.452612	
	5a DAYMEN	.3069	.3127	.3144	.3126	.3148	.3140	.4181	.4019										
	5b MINING (PIECE & DAY WORKERS)	.5144	.5098	.5104	.5064	.5108	.5093	.5972	.5941							.4014	.3955	.4030	.2859
	5c YARDAGE & DEADWORK	.0492	.0565	.0551	.0550	.0539	.0546	.0705	.0651				(NOTE)			.6155	.6142	.6033	.1869
	5d MINE SUPER & CLERICAL	.0649	.0736	.0661	.0643	.0564	.0618	.0822	.0739							.0726	.0716	.0707	.3044
	5e TOTAL MINE LABOR	.9356	.9466	.9460	.9383	.9359	.9397	1.1680	1.1350							.0773	.0688	.0749	.2159
	NO OF MINES REPORTING	919	901	825	828	878	845	816	786							1.1668	1.1501	1.1519	.2287
	NO OF DAYS TIPPLE STARTED	170	158	179	183	213	573	154	169							800	818	793	
	TOTAL TONS PRODUCED	15807870	14525686	15180120	15429512	19039522	49649154	12390842	13834977							152	175	1578	
	TOTAL - DIVISION II (DEEP & STRIP) b/															13207090	15321173	2838919	
	5a DAYMEN	.3460	.3445	.3387	.3199	.3216	.3269	.4054	.4084	.4155	.4203	.4012	.4094	.4083	.4061	.3811	.3733	.3994	.2218
	5b MINING (PIECE & DAY WORKERS)	.3381	.3528	.3383	.3302	.3141	.3276	.3031	.3307	.2944	.3311	.3427	.2485	.3342	.3474	.3608	.3713	.3423	.565
	5c YARDAGE & DEADWORK	.0249	.0243	.0160	.0145	.0147	.0151	.0246	.0164	.0132	.0134	.0157	.0188	.0177	.0185	.0166	.0166	.0174	.1523
	5d MINE SUPER. & CLERICAL	.0572	.0550	.0573	.0618	.0566	.0585	.0861	.0888	.0902	.0839	.0751	.0704	.0657	.0676	.0552	.0531	.0700	.1966
	5e TOTAL MINE LABOR	.7662	.7766	.7403	.7264	.7070	.7245	.8192	.8443	.8133	.8507	.8347	.8471	.8309	.8396	.8137	.8143	.8291	.1444
	NO. OF MINES REPORTING	189	203	181	164	161	169	148	131	121	124	139	158	161	166	169	173	149	
	NO. OF DAYS TIPPLE STARTED	159	168	175	163	174	512	118	112	118	143	137	146	159	156	194	204	1464	
	TOTAL TONS PRODUCED	4341911	4671881	4720675	4368119	4758245	13847039	2697564	2393227	2440817	2562972	3098715	3698776	3992873	3956844	5036452	5376431	35154673	
	ILLINOIS (DEEP & STRIP)																		
	5a DAYMEN	.3539	.3543	.3440	.3233	.3251	.3311	.4048	.4059	.4158	.4159	.3946	.4103	.4045	.4149	.3879	.3781	.4017	.2132
	5b MINING (PIECE & DAY WORKERS)	.3462	.3677	.3657	.3705	.3574	.3644	.3397	.3650	.3779	.3573	.3729	.3820	.3743	.3891	.4013	.4130	.3785	.387
	5c YARDAGE & DEADWORK	.0188	.0189	.0191	.0176	.0183	.0184	.0315	.0190	.0146	.0178	.0174	.0220	.0212	.0225	.0198	.0196	.0205	.1141
	5d MINE SUPER. & CLERICAL	.0525	.0498	.0560	.0609	.0583	.0576	.0833	.0839	.0837	.0777	.0685	.0653	.0621	.0657	.0521	.0502	.0656	.1389
	5e TOTAL MINE LABOR	.7714	.7907	.7848	.7723	.7571	.7715	.8593	.8738	.8320	.8687	.8534	.8796	.8721	.8922	.8611	.8609	.8663	.1229
	NO. OF MINES REPORTING	102	125	126	110	110	115	99	87	77	82	93	111	115	118	122	127	103	
	NO OF DAYS TIPPLE STARTED	155	167	176	161	169	505	111	110	119	124	137	148	157	154	195	205	1465	
	TOTAL TONS PRODUCED	2946358	3298411	3533470	3223272	3490954	10247696	1882927	1730113	1768242	1902091	2323388	2755109	2993384	2939661	3859444	4107891	26262250	

NOTE:
Totals are not shown for Division I - South - and Total Division I, due to Southern Subdivisions Nos. 1 and 2 reporting April through November, 1934, as 8-month totals.

a/ Total Division I does not include Western Kentucky from January 1934 through January 1935.

b/ Total Division II does not include Iowa from January 1934 through January 1935.

a/ DIVISION I - SOUTH includes:
Southern Subdivision No. 1
Southern Subdivision No. 2
Maryland
Upper Potomac, West Virginia
Western Kentucky (data not available)

Prepared by Bituminous Coal Section
Division of Review - W.A.A.
Under the Supervision of [illegible]

LABOR COSTS PER TON BEFORE AND AFTER APRIL 1, 1934 – BITUMINOUS COAL

FORM A ITEM NO.	DIVISION AND SUBDIVISION	NOVEMBER 1933	DECEMBER 1933	JANUARY 1934	FEBRUARY 1934	MARCH 1934	TOTAL 3 MONTHS JAN, FEB AND MAR 1934	APRIL 1934	MAY 1934	JUNE 1934	JULY 1934	AUGUST 1934	SEPT 1934	OCTOBER 1934	NOVEMBER 1934	DECEMBER 1934	JANUARY 1935	10 MONTH TOTAL APRIL 1934 THROUGH JAN 1935	% INCREASE OF LABOR COST 10 MONTHS' SUMMARY OVER JAN FEB MAR 1934
	INDIANA (DEEP AND STRIP)																		
5a	DAYMEN	.3166	.3133	.3229	.3103	.3121	.3150	.4068	.4152	.4146	.4332	.4210	.4044	.3897	.3806	.3586	.3580	.3929	.2473
5b	MINING (PIECE AND DAYWORKERS)	.2501	.2274	.2168	.2165	.1947	.2089	.2185	.2413	.2327	.2557	.2519	.2390	.2342	.2270	.2279	.2361	.2354	.1269
5c	YARDAGE AND DEADWORK	.0097	.0061	.0067	.0059	.0047	.0058	.0087	.0095	.0097	.0082	.0105	.0084	.0071	.0071	.0063	.0070	.0080	.3793
5d	MINE SUPER. AND CLERICAL	.0632	.0657	.0611	.0644	.0576	.0609	.0926	.1015	.1070	.1016	.0950	.0871	.0764	.0731	.0655	.0628	.0838	.3546
5e	TOTAL MINE LABOR	.6398	.6125	.6075	.5971	.5640	.5906	.7266	.7675	.7640	.7987	.7784	.7409	.7074	.6878	.6583	.6635	.7191	.2176
	NO OF MINES REPORTING	59	53	55	54	51	53	49	44	44	42	46	47	46	48	47	46	46	
	NO. OF DAYS TIPPLE STARTED	168	169	171	169	193	532	136	116	115	121	135	141	165	163	192	201	1485	
	TOTAL TONS PRODUCED	1225719	1159220	1187205	1144847	1267291	3599243	814637	663114	672575	660881	775327	843667	999489	1017183	1177010	1268540	8892423	
	IOWA (DEEP AND STRIP)																		
5a	DAYMEN	4114	a/ 3623																
5b	MINING (PIECE AND DAYWORKERS)	7598	8025																
5c	YARDAGE AND DEADWORK	2059	2062																
5d	MINE SUPER. AND CLERICAL	0879	0763																
5e	TOTAL MINE LABOR	14650	14473																
	NO. OF MINES REPORTING	28	25																
	NO. OF DAYS TIPPLE STARTED	162	180																
	TOTAL TONS PRODUCED	199834	214210																
	ALABAMA																		
5a	DAYMEN	.4115	.3632	.3846	.3463	.4061	.3780	.5551	.4997	.5716	.5457	.5642	.6599	.5510	.5364	.5148		c/ .5416	d/ .4328
5b	MINING (PIECE AND DAYWORKERS)	.5342	.5584	.5486	.5501	.5389	.5461	.6166	.6614	.6515	.6519	.6604	.6440	.6617	.6441	.6639		.6574	.2036
5c	YARDAGE AND DEADWORK	.0732	.0658	.0689	.0812	.0823	.0773	.0995	.1029	.1157	.1178	.1076	.1259	.1168	.1123	.1119	b/	.1124	.4541
5d	MINE SUPER. AND CLERICAL	.1106	.1292	.1112	.0936	.0940	.0998	.1427	.0805	.1019	.1105	.1048	.1162	.0960	.0965	.0869		.0996	(.020)
5e	TOTAL MINE LABOR	.1295	.1116	.1133	.1072	.1212	.1012	.1439	.1345	.1407	.1459	.1370	.1560	.1455	.1093	.1375		.1110	.2813
	NO OF MINES REPORTING	43	42	41	39	39	40	36	45	45	43	43	42	43	43	42		42	
	NO. OF DAYS TIPPLE STARTED	125	129	149	153	150	453	90	195	147	134	146	139	156	147	165		1320	
	TOTAL TONS PRODUCED	410327	392996	436908	436465	391165	1262538	219096	554370	434275	388149	417736	377521	434612	417791	472594		3716146	
	SO. TENNESSEE AND GEORGIA																		
5a	DAYMEN	.2921	.3187	.3281	.2399	.2896	.2819		.3878	.4343	.4470	.3875	.4182	.3963	.3932	d/ .3207		e/ .3993	h/ .4165
5b	MINING (PIECE AND DAY WORKERS)	.6674	.7200	.7382	.7051	.6867	.7043		.8082	.8233	.8008	.8071	.7745	.7668	.7691	.7054		.7848	.1143
5c	YARDAGE AND DEADWORK	.1241	.1020	.1249	.1236	.1371	.1300	c/	.1433	.1432	.1508	.1329	.1643	.1820	.1633	.1282	b/	.1511	.1623
5d	MINE SUPER. AND CLERICAL	.1085	.0942	.0700	.0822	.0658	.0721		.0825	.0905	.1020	.0867	.1001	.0833	.0897	.0968		.0909	.2607
5e	TOTAL MINE LABOR	.1921	.2249	.2612	.1508	.1792	.1883		.2218	.2413	.2606	.2142	.2571	.2284	.2153	.2511		.2261	.2001
	NO. OF MINES REPORTING	7	8	4	6	7	6		8	7	8	8	8	7	7	4		8	
	NO OF DAYS TIPPLE STARTED	146	149	172	187	208	567		199	172	160	173	149	155	142	160		1255	
	TOTAL TONS PRODUCED	69244	70443	47310	69325	44437	211072		86360	70601	64931	77173	69852	70532	68111	55751		563311	
	TOTAL DIVISION III																		
5a	DAYMEN	.3942	.3565	.3791	.3317	.3833	.3642	.5551	.4846	.5524	.5315	.5366	.5378	.5294	.5164	.4943		f/ .5228	i/ .4365
5b	MINING (PIECE AND DAYWORKERS)	.5535	.5788	.5671	.5713	.5678	.5688	.6166	.6812	.6755	.6733	.6833	.6813	.6764	.6788	.6683		.6742	.1853
5c	YARDAGE AND DEADWORK	.0805	.0713	.0744	.0871	.0929	.0848	.0995	.1083	.1195	.1225	.1115	.1319	.1259	.1194	.1136	b/	.1175	.3856
5d	MINE SUPER. AND CLERICAL	.1103	.1238	.1072	.0920	.0885	.0958	.1427	.0808	.1003	.1093	.1020	.1052	.0942	.0955	.0880		.0985	.282
5e	TOTAL MINE LABOR	.1385	.1304	.1279	.1082	.1325	.1136	.1439	.1354	.1477	.1466	.1433	.1562	.1459	.1401	.1362		.1430	.2589
	NO OF MINES REPORTING	50	50	45	45	46	45	36	53	52	51	51	50	50	50	46		50	
	NO OF DAYS TIPPLE STARTED	127	131	151	157	159	467	90	196	150	136	150	140	156	146	166		1311	
	TOTAL TONS PRODUCED	479621	463439	484218	505790	473610	1473610	219096	640730	506876	453080	494909	447373	505146	485902	528245		3279457	

a/ No strip mines reporting.

b/ Data not available.

c/ Due to insufficient data, So. Tenn. and Ga. are not shown for April.

d/ Includes only District 1 for December. Data for District 2 not available.

e/ Total for nine months only.

f/ Total for eight months only.

g/ Increase of nine months over three months.

h/ Increase of eight months over three months.

Figure in parenthesis denotes decrease.

Prepared by Bituminous Coal Section
Division of Review – N.R.A.
Under the Supervision of F. R. Bergquist

TABLE 37 - SECTION B

STATISTICS OF STRIKES, SUSPENSIONS AND LOCKOUTS AT BITUMINOUS COAL MINES IN THE UNITED STATES, 1899-1933 a/
(Compiled from the Annual Coal Reports of the U. S. Bureau of Mines, formerly U. S. Geological Survey, as Published in Mineral Resources of the United States)

	1899			1900			1901			1902		
	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike
Alabama	1,135	68,925	61	1,056	50,620	48	1,170	14,071	12	6,059	139,783	23
Arkansas	2,041	216,265	106	47	5,040	107	—	—	—	14	140	10
Colorado	504	31,520	62	17	935	55	1,527	86,045	56	444	20,845	47
Georgia	—	—	—	—	—	—	—	—	—	—	—	—
Illinois	7,133	267,171	37	3,909	134,433	34	3,740	79,245	21	3,916	65,231	17
Indiana	3,272	132,825	40	3,583	71,282	20	1,027	40,812	39	1,824	23,693	13
Iowa	2,623	72,710	28	1,322	62,333	47	401	16,171	40	363	6,480	18
Kansas	1,986	88,798	45	157	3,590	23	60	300	5	334	17,256	52
Kentucky	837	24,598	29	2,946	90,095	31	933	32,707	35	1,248	22,184	18
Maryland	35	420	12	4,787	504,544	105	—	—	—	—	—	—
Michigan	487	9,547	20	81	1,514	19	—	—	—	1,935	239,146	124
Missouri	2,197	117,076	53	632	34,970	55	1,042	31,318	30	1,364	61,273	45
Montana	650	33,800	52	40	1,640	41	285	14,175	49	686	7,636	11
New Mexico	—	—	—	—	—	—	766	32,949	43	470	9,820	21
North Carolina .	—	—	—	—	—	—	—	—	—	—	—	—
North Dakota ...	—	—	—	—	—	—	32	224	7	8	8	1
Ohio	877	26,394	30	2,035	45,547	22	2,724	105,177	38	3,769	70,534	19
Oklahoma	1,825	281,256	154	110	31,100	283	—	—	—	150	9,000	60
Pennsylvania ...	15,131	636,160	42	7,574	223,093	29	2,541	125,116	49	12,580	264,862	21
South Dakota ...	—	—	—	—	—	—	—	—	—	—	—	—
Tennessee	1,595	37,085	23	1,559	67,308	43	1,705	82,730	49	1,904	136,347	72
Texas	185	2,775	15	135	2,740	20	113	226	2	50	50	1
Utah	—	—	—	—	—	—	754	23,055	30	—	—	—
Virginia	—	—	—	—	—	—	175	3,200	18	205	5,875	29
Washington	—	—	—	100	3,000	30	—	—	—	—	—	—
West Virginia ..	3,468	76,829	22	1,883	44,318	24	1,438	45,161	31	18,129	1,362,054	75
Wyoming	—	—	—	—	—	—	160	1,120	7	—	—	—
Other small States	—	—	—	—	—	—	—	—	—	—	—	—
Total ...	45,981	2,124,154	46	31,973	1,378,102	43	20,593	733,802	35	55,452	2,462,217	44

a/ NOTE: These figures are based upon repliss of operatore to ths question "Were there any strikes at the mine during the year? If so, give number of men on strike and duration in days (Sundays and holidays excluded)." As the answer is supplied by one party to a controversy, the operators' statements in the case of major strikes have been checked as far as possibls against evidence from other sources, such as weekly reports of carloadings by the railroads, accounts in newspapers and trade journals, and during the suspension of 1922 by questioning representatives of the miners' union in certain districts.

The opsrator is not asked to state the cause of the stoppage, a subject on which his opinion might differ from that of his employees, and it is evident that some stoppages have been reported as "strikes" which the employess would have considered as "lockouts." By far the most important stoppages have been those occurring at the expiration of the wage contracts when the two parties were unable to agree upon the terms of a new contract. Such a stoppage may properly be termed as a "suspension" rather than either a strike or a lockout. For these reasons all stoppages are grouped together under the headings, "Strikes, suspensions, and lockouts."

Among the most important "suspensions" were those attending the expiration of the wage contracts in 1906, 1908, 1910, 1912, 1914, 1922, 1927, 1928, and 1932.

Regarding the large number of days lost on account of labor disputes, it does not follow that if there had been no strike the number of days worked would have been larger, for some other cause of non-operation might have intervened to keep the mines idle.

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STATISTICS OF STRIKES, SUSPENSIONS AND LOCKOUTS AT BITUMINOUS COAL MINES IN THE UNITED STATES, 1899-1933
(Compiled from the Annual Coal Reports of the U. S. Bureau of Mines, formerly U. S. Geological Survey, as Published in Mineral Resources of the United States)

	1903			1904			1905			1906		
	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike
Alabama	7,319	231,112	32	9,518	762,032	80	667	33,262	50	549	6,576	12
Arkansas	398	2,078	5	76	1,424	19	625	7,806	12	3,828	291,095	76
Colorado	7,103	407,909	57	3,865	481,482	125	—	—	—	—	—	—
Georgia	—	—	—	—	—	—	—	—	—	—	—	—
Illinois	3,772	70,731	19	16,983	156,528	9	15,289	321,967	21	49,792	2,900,525	58
Indiana	2,680	46,566	17	1,061	22,963	18	981	12,528	13	15,875	995,217	63
Iowa	1,143	11,365	99	8,303	173,781	21	1,774	10,353	6	7,969	204,860	28
Kansas	328	2,516	8	186	1,214	7	1,482	14,686	10	11,827	709,422	59
Kentucky	599	13,717	22	3,781	144,245	39	923	62,651	68	1,242	44,812	36
Maryland	120	6,045	5	—	—	—	—	—	—	30	300	10
Michigan	75	825	11	564	2,402	4	—	—	—	3,340	294,630	88
Missouri	1,306	13,892	11	1,844	26,312	14	435	6,788	16	6,212	483,790	78
Montana	—	—	—	792	37,140	47	200	36,000	180	230	7,030	31
New Mexico	54	710	13	556	73,090	131	—	—	—	—	—	—
North Carolina	—	—	—	—	—	—	—	—	—	—	—	—
North Dakota	35	340	10	175	6,300	36	—	—	—	37	92	2
Ohio	4,115	65,149	16	11,412	514,658	45	3,250	49,495	15	37,636	2,687,288	71
Oklahoma	448	1,928	4	488	5,175	11	397	3,509	9	7,372	535,504	72
Pennsylvania	12,805	321,925	25	9,336	576,353	62	5,686	186,250	33	59,593	3,941,835	66
South Dakota	—	—	—	—	—	—	—	—	—	—	—	—
Tennessee	1,639	36,021	22	2,391	170,680	71	150	4,770	32	180	1,185	7
Texas	1,055	24,460	23	55	585	11	25	375	15	1,260	9,245	7
Utah	350	9,800	28	—	—	—	6	6	1	—	—	—
Virginia	—	—	—	—	—	—	—	—	—	—	—	—
Washington	200	6,600	33	365	25,020	69	—	—	—	—	—	—
West Virginia	1,524	63,212	41	3,682	167,343	45	462	12,111	26	4,101	123,724	30
Wyoming	413	4,130	10	—	—	—	192	192	1	231	5,775	25
Other small States	--	—	—	—	—	—	—	—	—	—	—	—
Total	47,481	1,341,031	28	75,433	3,348,727	44	32,544	762,749	234	211,304	13,242,905	63

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TABLE 39 - SECTION B

STATISTICS OF STRIKES, SUSPENSIONS AND LOCKOUTS AT BITUMINOUS COAL MINES IN THE UNITED STATES, 1899-1933
(Compiled from the Annual Coal Reports of the U. S. Bureau of Mines, formerly U. S. Geological Survey, as Published in Mineral Resources of the United States).

	1907			1908			1909			1910		
	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike
Alabama	80	3,600	45	8,397	373,513	44	—	—	—	25	1,250	50
Arkansas	1,185	35,835	30	4,037	387,841	96	1,443	41,836	29	4,873	713,210	146
Colorado	215	6,378	30	768	16,646	22	55	1,250	23	2,044	195,558	96
Georgia	—	—	—	—	—	—	—	—	—	270	2,970	11
Illinois	5,255	35,191	7	47,456	1,737,611	37	2,335	90,720	38	67,218	9,133,953	136
Indiana	3,176	42,842	13	7,076	157,899	22	36	720	20	12,638	423,894	34
Iowa	1,621	8,265	5	5,248	121,087	23	2,036	12,504	6	9,209	408,563	44
Kansas	923	16,957	18	11,155	665,224	60	4,715	71,566	15	10,346	1,578,027	153
Kentucky	1,325	53,916	41	1,002	26,941	27	275	16,500	60	1,475	15,197	10
Maryland	510	13,770	27	—	—	—	25	175	7	—	—	—
Michigan	265	1,325	5	300	4,800	16	527	23,002	44	1,663	86,789	52
Missouri	777	8,222	11	6,350	355,138	56	957	6,593	7	7,774	1,218,599	157
Montana	30	600	20	556	9,201	17	110	1,100	10	345	38,260	111
New Mexico	—	—	—	—	—	—	—	—	—	—	—	—
North Carolina	—	—	—	—	—	—	—	—	—	—	—	—
North Dakota	82	736	9	104	1,620	16	75	525	7	—	—	—
Ohio	6,367	110,324	17	21,084	567,450	27	2,375	139 434	59	24,746	1,334,631	54
Oklahoma	669	17,092	26	6,929	398,251	57	1,576	11,368	7	8,213	1,247,828	152
Pennsylvania	6,447	59,834	9	18,780	375,569	20	5,824	260,381	45	60,098	2,700,746	45
South Dakota	—	—	—	—	—	—	—	—	—	—	—	—
Tennessee	284	4,725	17	349	11,441	33	277	9,295	34	—	—	—
Texas	270	1,610	6	169	338	2	80	4,800	60	1,776	108,230	61
Utah	148	592	4	—	—	—	—	—	—	—	—	—
Virginia	—	—	—	—	—	—	—	—	—	—	—	—
Washington	484	8,544	18	226	67,800	300	123	2,300	19	101	303	3
West Virginia	617	9,749	16	501	71,992	144	1,919	29,565	15	1,630	13,985	9
Wyoming	1,785	22,060	12	4,658	99,576	21	—	—	—	1,196	12,792	11
Other small States 1/	25	225	9	—	—	—	—	—	—	—	—	—
Total	32,540	462,392	14	145,145	5,449,938	38	24,763	723,634	29	215,640	19,234,785	89

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TABLE 40 - SECTION B

STATISTICS OF STRIKES, SUSPENSIONS AND LOCKOUTS AT BITUMINOUS COAL MINES IN THE UNITED STATES, 1899-1933.
(Compiled from the Annual Coal Reports of the U. S. Bureau of Mines, formerly U. S. Geological Survey, as Published in Mineral Resources of the United States)

	1911			1912			1913			1914		
	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike
Alabama	210	1,260	6	384	12,323	32	1,048	27,041	26	320	3,940	12
Arkansas	665	4,615	7	403	37,685	94	1,221	32,481	27	1,415	159,854	113
Colorado	150	32,375	216	—	—	—	7,324	552,082	75	4,418	1,090,025	247
Georgia	—	—	—	—	—	—	—	—	—	—	—	—
Illinois	5,543	100,588	18	60,505	2,026,526	33	11,861	655,622	55	23,506	970,466	41
Indiana	4,577	146,636	32	15,400	795,887	52	2,657	44,143	17	8,052	302,855	38
Iowa	1,622	31,870	20	8,455	370,449	44	721	13,538	19	2,642	76,791	29
Kansas	984	8,507	9	2,088	13,487	65	3,178	28,936	9	2,673	45,257	17
Kentucky	1,080	34,008	32	2,759	79,685	29	1,029	18,638	18	2,250	82,919	37
Maryland	—	—	—	347	3,228	9	200	400	2	91	1,547	17
Michigan	—	—	—	2,028	101,424	50	180	1,260	7	—	—	—
Missouri	504	24,216	48	952	55,022	58	918	31,251	34	1,162	56,536	49
Montana	529	8,114	15	869	8,445	10	1,094	6,682	6	171	1,271	7
New Mexico	—	—	—	—	—	—	8	1,040	130	—	—	—
North Carolina	—	—	—	—	—	—	—	—	—	—	—	—
North Dakota	34	69	2	10	20	2	—	—	—	—	—	—
Ohio	9,530	350,039	37	27,200	895,777	32	10,029	267,234	26	40,577	6,452,762	159
Oklahoma	444	15,106	34	860	12,109	14	1,696	135,274	80	1,286	39,500	31
Pennsylvania	5,601	148,124	26	22,538	538,248	24	17,244	274,296	16	36,613	1,052,005	29
South Dakota	—	—	—	—	—	—	—	—	—	—	—	—
Tennessee	163	1,630	10	670	20,011	30	857	42,966	50	—	—	—
Texas	60	300	5	238	1,724	7	—	—	—	221	693	3
Utah	208	624	3	—	—	—	5	1,300	260	150	1,800	12
Virginia	—	—	—	—	—	—	—	—	—	—	—	—
Washington	2,099	22,215	10	807	31,347	39	1,239	60,145	49	459	25,410	55
West Virginia	1,510	16,483	11	12,165	606,588	50	8,800	377,405	43	9,330	466,768	50
Wyoming	—	—	—	360	3,425	10	—	—	—	248	2,727	11
Other small States 1/	—	—	—	60	420	7	—	—	—	21	798	38
	35,513	946,779	27	159,098	5,613,830	35	71,309	2,567,734	36	135,605	10,833,924	80

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TABLE 41 - SECTION B

STATISTICS OF STRIKES, SUSPENSIONS AND LOCKOUTS AT BITUMINOUS COAL MINES IN THE UNITED STATES, 1899-1933
(Compiled from the Annual Coal Reports of the U. S. Bureau of Mines, formerly U. S. Geological Survey, as Published in Mineral Resources of the United States)

	1915			1916			1917			1918		
	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike
Alabama	175	1,290	7	300	920	3	1,835	10,220	6	1,952	3,259	2
Arkansas	925	20,304	22	1,009	30,847	31	2,417	27,315	11	1,207	4,292	4
Colorado	90	13,500	150	38	82	2	1,664	7,292	4	464	2,318	5
Georgia	--	--	--	--	--	--	--	--	--	-230	1,610	7
Illinois	5,251	276,458	53	5,043	55,416	11	38,781	464,511	12	10,251	74,850	7
Indiana	1,472	21,361	15	8,154	154,974	19	11,914	74,695	6	8,083	51,015	6
Iowa	1,067	5,229	5	2,241	32,587	15	3,275	18,407	6	997	4,774	5
Kansas	1,716	17,425	10	6,306	152,838	24	7,312	128,514	18	4,675	25,047	5
Kentucky	1,045	16,455	16	4,830	269,859	56	9,348	425,725	46	1,226	15,318	12
Maryland	--	--	--	181	6,546	36	1,523	24,605	16	2,517	5,402	2
Michigan	--	--	--	1,416	18,189	13	163	1,964	12	1,367	18,194	13
Missouri	939	4,597	5	2,331	14,837	6	2,175	31,767	15	1,191	5,800	5
Montana	183	1,084	6	396	1,530	4	1,063	23,680	22	218	218	1
New Mexico	--	--	--	--	--	--	85	775	9	--	--	--
North Carolina	--	--	--	--	--	--	--	--	--	--	--	--
North Dakota	--	--	--	26	78	3	82	811	10	22	166	8
Ohio	15,048	1,722,013	114	7,594	156,689	21	7,710	56,875	7	4,993	44,837	9
Oklahoma	1,013	4,485	4	6,240	126,452	20	1,668	37,301	22	630	12,294	20
Pennsylvania	5,583	78,446	14	36,276	1,200,479	33	23,655	544,322	23	12,852	112,929	9
South Dakota	--	--	--	--	--	--	--	--	--	--	--	--
Tennessee	--	--	--	350	3,784	11	4,448	192,730	43	835	2,454	3
Texas	230	760	3	2,218	62,905	28	75	260	3	55	550	10
Utah	--	--	--	181	543	3	212	848	4	30	30	1
Virginia	7	7	1	--	--	--	232	2,283	10	523	10,241	20
Washington	--	--	--	1,203	13,304	11	192	840	4	75	1,275	17
West Virginia	1,902	66,698	35	4,540	86,352	19	6,166	111,479	18	5,712	42,009	7
Wyoming	219	2,628	12	276	308	1	--	--	--	--	--	--
Other small States 1/	--	--	--	--	--	--	25	25	1	--	--	--
Total	36,865	2,252,740	61	91,152	2,389,519	26	126,020	2,187,244	17	60,105	438,882	7

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TABLE 42 - SECTION B

STATISTICS OF STRIKES, SUSPENSIONS AND LOCKOUTS AT BITUMINOUS COAL MINES IN THE UNITED STATES, 1899-1933.
(Compiled from the Annual Coal Reports of the U. S. Bureau of Mines, Formerly U. S. Geological Survey, as Published in Mineral Resources of the United States)

	1919			1920			1921			1922		
	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike
Alabama	13,431	269,242	20	8,490	800,519	94	2,329	157,401	68	46	167	4
Arkansas	3,681	161,069	44	956	28,015	29	1,677	17,400	10	3,691	435,507	118
Colorado	6,186	89,392	14	2,012	18,240	9	2,497	72,830	29	6,672	527,250	79
Georgia	168	2,016	12	—	—	—	—	—	—	—	—	—
Illinois	81,600	3,558,094	44	68,481	948,408	14	18,088	226,112	13	93,584	11,547,829	123
Indiana	28,431	1,135,013	40	19,068	411,991	22	17,634	321,593	18	31,721	3,924,396	124
Iowa	11,350	433,884	38	4,966	24,366	5	897	1,840	2	12,192	1,479,497	121
Kansas	9,104	531,791	58	5,461	161,485	30	7,285	538,811	74	6,515	847,075	130
Kentucky	22,598	696,165	31	9,192	312,460	34	1,789	64,448	36	10,270	605,441	59
Maryland	5,337	143,523	27	1,733	25,514	15	123	4,463	36	4,446	688,206	155
Michigan	2,087	153,351	73	1,659	24,993	15	780	2,826	4	2,062	247,919	120
Missouri	8,315	458,588	55	1,841	36,015	20	2,089	50,108	24	7,535	939,192	125
Montana	3,833	153,159	40	377	6,952	18	92	2,035	22	3,361	428,678	128
New Mexico	1,183	18,307	15	—	—	--	425	1,700	4	585	75,135	128
North Carolina	—	—	—	—	—	—	—	—	—	—	—	—
North Dakota	576	4,281	7	49	473	9	15	225	15	578	49,238	85
Ohio	42,724	1,717,426	40	17,333	245,314	14	17,682	176,605	10	46,283	5,502,885	118
Oklahoma	7,963	317,538	40	2,267	24,053	11	1,520	12,231	8	5,872	773,127	132
Pennsylvania	97,089	3,765,144	39	27,728	479,708	17	14,895	302,525	20	155,604	18,388,895	118
South Dakota	—	—	—	—	—	—	—	—	—	—	—	—
Tennessee	10,199	334,315	33	202	1,478	7	638	17,350	27	5,864	482,231	82
Texas	1,747	52,858	30	824	9,737	12	--	—	--	693	13,867	20
Utah	317	4,866	15	113	791	7	100	200	2	2,111	212,896	101
Virginia	947	22,956	24	48	1,736	36	--	—	—	240	2,200	9
Washington	4,369	186,942	43	201	22,962	114	802	139,126	173	2,225	299,861	135
West Virginia	48,062	1,158,094	24	12,340	511,225	41	7,198	170,017	24	49,832	5,348,298	107
Wyoming	6,982	157,843	23	238	2,722	11	591	2,978	5	8,607	1,054,227	122
Other small States	—	—	—	—	—	—	—	—	—	—	—	—
Total	418,279	15,525,857	37	185,579	4,099,157	22	99,146	2,282,824	23	460,589	53,874,017	117

STATISTICS OF STRIKES, SUSPENSIONS AND LOCKOUTS AT BITUMINOUS COAL MINES IN THE UNITED STATES, 1899-1933
(Compiled from the Annual Coal Reports of the U. S. Bureau of Mines, formerly U. S. Geological Survey, as Published in Mineral Resources of the United States)

	1923			1924			1925			1926		
	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike
Alabama	—	—	—	—	—	—	—	—	—	—	—	—
Arkansas	324	9,009	28	1,076	29,272	27	560	41,928	75	205	1,635	8
Colorado	—	—	—	120	840	7	595	6,943	12	—	—	—
Georgia	—	—	—	—	—	—	—	—	—	—	—	—
Illinois	7,474	95,458	13	4,217	50,101	12	4,870	25,180	5	987	12,609	13
Indiana	10,765	104,604	10	7,699	159,743	21	7,919	96,963	12	10,450	179,375	17
Iowa	1,946	19,874	10	986	16,445	17	1,267	3,740	3	932	19,510	21
Kansas	949	24,741	26	2,706	118,918	44	530	8,080	15	118	1,560	13
Kentucky	2,699	92,035	34	8,938	1,735,739	194	1,954	162,534	83	688	13,170	19
Maryland	2,686	359,920	134	168	504	3	—	—	—	603	3,289	5
Michigan	786	3,992	5	425	1,525	4	725	5,575	8	225	225	1
Missouri	312	10,857	35	1,580	76,660	49	110	1,287	12	64	760	12
Montana	25	25	1/	17	53	3	—	—	—	225	450	2
New Mexico	—	—	—	—	—	—	—	—	—	—	—	—
North Carolina	—	—	—	—	—	—	—	—	—	—	—	—
North Dakota	85	6,933	82	—	—	—	—	—	—	—	—	—
Ohio	16,486	203,161	12	10,256	217,752	21	6,572	170,208	26	6,857	85,118	12
Oklahoma	1,020	8,211	8	1,318	144,607	110	352	16,773	48	20	20	1
Pennsylvania	10,984	157,130	14	8,793	361,226	41	7,414	234,389	32	4,922	272,918	55
South Dakota	—	—	—	—	—	—	—	—	—	—	—	—
Tennessee	572	24,766	43	2,134	244,945	115	250	2,350	9	300	300	1
Texas	137	18,141	132	—	—	—	87	261	3	—	—	—
Utah	—	—	—	58	310	5	280	10,920	39	—	—	—
Virginia	—	—	—	—	—	—	—	—	—	—	—	—
Washington	1,754	50,681	29	—	—	—	—	—	—	—	—	—
West Virginia	2,625	49,587	19	7,688	1,060,478	138	4,956	376,399	76	2,692	126,242	47
Wyoming	—	—	—	—	—	—	—	—	—	—	—	—
Other small States 2/	—	—	—	—	—	—	—	—	—	60	120	2
Total	61,629	1,239,125	20	58,179	4,219,118	73	38,441	1,163,530	30	29,348	717,301	24

1/ One-half day or less.

2/ The State affected in 1926 was not designated in the published report.

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STATISTICS ON STRIKES, SUSPENSIONS AND LOCKOUTS AT BITUMINOUS COAL MINES IN THE UNITED STATES, 1899-1933
(Compiled from the Annual Coal Reports of the U. S. Bureau of Mines, formerly U. S. Geological Survey, as Published in Mineral Resources of the United States)

	1927 1/			1928			1929			1930		
	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike
Alabama	—	—	—	—	—	—	—	—	—	—	—	—
Arkansas	389	41,810	107	—	—	—	95	2,177	23	—	—	—
Colorado	5,429	267,210	49	1,594	57,184	36	—	—	—	—	—	—
Georgia	—	—	—	—	—	—	—	—	—	—	—	—
Illinois	66,992	10,018,566	150	21,815	1,463,409	67	10,162	68,155	7	9,483	348,779	37
Indiana	17,303	2,345,279	136	3,216	91,842	29	3,851	58,553	15	2,008	32,003	16
Iowa	5,624	815,764	145	1,986	68,623	35	810	2,434	3	591	3,754	6
Kansas	3,014	390,711	130	1,525	168,766	111	106	3,341	32	—	—	—
Kentucky	1,824	24,756	14	1,130	14,124	12	561	4,286	8	6,436	562,067	87
Maryland	—	—	—	—	—	—	—	—	—	—	—	—
Michigan	470	1,510	3	430	6,320	15	762	3,894	5	630	2,560	4
Missouri	2,662	336,972	127	941	67,585	72	211	633	3	50	700	14
Montana	—	—	—	1,219	9,178	8	—	—	—	—	—	—
New Mexico	—	—	—	—	—	—	—	—	—	—	—	—
North Carolina	—	—	—	—	—	—	—	—	—	—	—	—
North Dakota	—	—	—	—	—	—	—	—	—	—	—	—
Ohio	1/ 26,250	5,605,443	214	9,222	1,576,760	171	943	46,165	49	1,143	12,583	11
Oklahoma	163	25,428	156	—	—	—	—	—	—	—	—	—
Pennsylvania	1/ 41,692	6,591,870	158	5,999	658,111	110	313	4,073	13	924	14,689	16
South Dakota	—	—	—	—	—	—	—	—	—	—	—	—
Tennessee	50	3,000	60	265	795	3	200	1,200	6	—	—	—
Texas	—	—	—	—	—	—	—	—	—	—	—	—
Utah	—	—	—	—	—	—	—	—	—	—	—	—
Virginia	—	—	—	—	—	—	110	880	8	—	—	—
Washington	—	—	—	—	—	—	—	—	—	—	—	—
West Virginia	982	47,548	48	210	18,650	89	—	—	—	1,523	13,215	9
Wyoming	—	—	—	1,190	3,057	3	151	151	1	10	10	1
Other small States	—	—	—	—	—	—	—	—	—	—	—	—
Total	172,844	26,515,867	153	50,742	4,204,404	83	18,275	195,942	11	22,798	990,360	43

1/ This table is based on statements from the operators. The figures are compiled in the same way as in previous reports, but owing to the unusual conditions attending the strike of 1927, they tend to understate the extent of the strike, and the number of coal miners who were idle during the year primarily because of the strike. This is especially true of Pennsylvania, and Ohio. For example, men evicted from company houses and replaced in the mines by other men would not be counted by the operator as striking his mine, even though living in tents or barracks erected by the union. Many mines reopened after three or four months, operating with smaller working forces than before, but considering the strike over as far as they were concerned. In the Pennsylvania bituminous fields the number of men on the pay rolls in January was 152,527 and the number in December was 126,239.

TABLE 46 - SECTION B

STATISTICS OF STRIKES, SUSPENSIONS AND LOCKOUTS AT BITUMINOUS COAL MINES IN THE UNITED STATES, 1899-1933
(Compiled from the Annual Coal Reports of the U. S. Bureau of Mines, formerly U. S. Geological Survey, as Published in Mineral Resources of the United States)

	1931			1932			1933		
	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike	Number of men on strike, etc.	Total man-days lost on account of strike, etc.	Average days lost per man on strike
Alabama	—	—	—	—	—	—	1,200	17,783	15
Arkansas	860	21,153	25	1,964	103,522	53	1,225	8,241	7
Colorado	—	—	—	—	—	—	605	8,363	14
Georgia	—	—	—	—	—	—	—	—	—
Illinois	9,400	397,263	42	32,961	4,397,006	133	1/ 3,187	130,197	41
Indiana	883	14,151	16	3,820	507,051	133	3,151	48,210	15
Iowa	824	24,500	30	389	7,503	19	4,462	186,763	42
Kansas	38	570	15	58	350	6	18	540	30
Kentucky	2,920	59,240	20	721	30,725	43	5,302	69,037	13
Maryland	—	—	—	67	402	6	40	80	2
Michigan	597	26,185	44	--	--	--	562	62,990	112
Missouri	679	34,671	51	301	48,590	161	463	8,040	17
Montana	—	—	—	748	28,100	38	—	—	—
New Mexico	—	—	—	—	--	—	693	27,818	40
North Carolina	—	—	—	—	—	—	—	—	—
North Dakota	—	—	—	—	—	—	--	—	—
Ohio	5,591	138,155	25	15,290	2,130,292	139	3,647	45,942	13
Oklahoma	501	19,812	40	970	46,903	48	219	1,296	6
Pennsylvania	12,783	398,932	31	2,021	113,696	56	86,832	2,896,545	33
South Dakota	--	—	—	—	—	--	—	—	—
Tennessee	1,133	28,767	25	550	35,967	65	375	10,125	27
Texas	--	—	—	—	--	—	—	—	--
Utah	—	—	—	—	—	—	653	9,975	15
Virginia	—	—	—	140	140	1	3,226	56,442	17
Washington	—	—	—	958	42,266	44	894	87,270	98
West Virginia	8,441	393,883	47	1,510	44,307	29	8,723	50,929	6
Wyoming	8	8	1	399	15,648	39	26	26	1
Other small States	—	—	—	—	—	—	—	—	—
Total	44,658	1,557,320	35	62,867	7,552,468	120	125,503	3,726,612	30

1/ Does not include men laid idle at certain mines through labor factional trouble, due to jurisdictional claims of a rival union, which was reported by the operator, as responsible for tonnage losses, ranging from 15 to 88 percent.

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Prepared by F. G. Tryon and L. Mann
Coal Economics Division,
U. S. Bureau of Mines, Nov. 3, 1935.

Appendix III

CHART NO. I DIVISION I

BITUMINOUS COAL - COST, REALIZATION, AND MARGINS BY MONTHS

NOV. 1933 THRU DEC. 1934

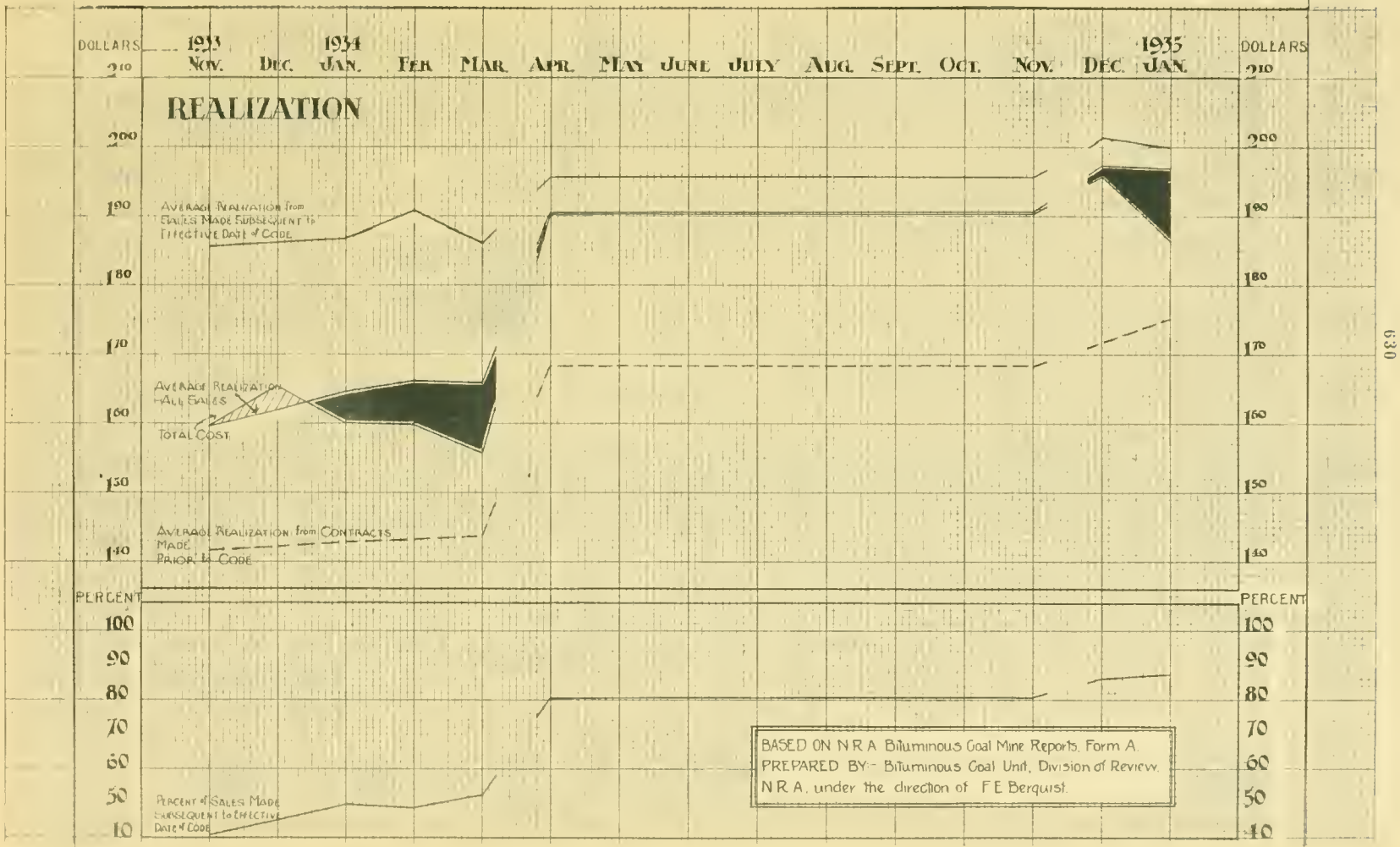

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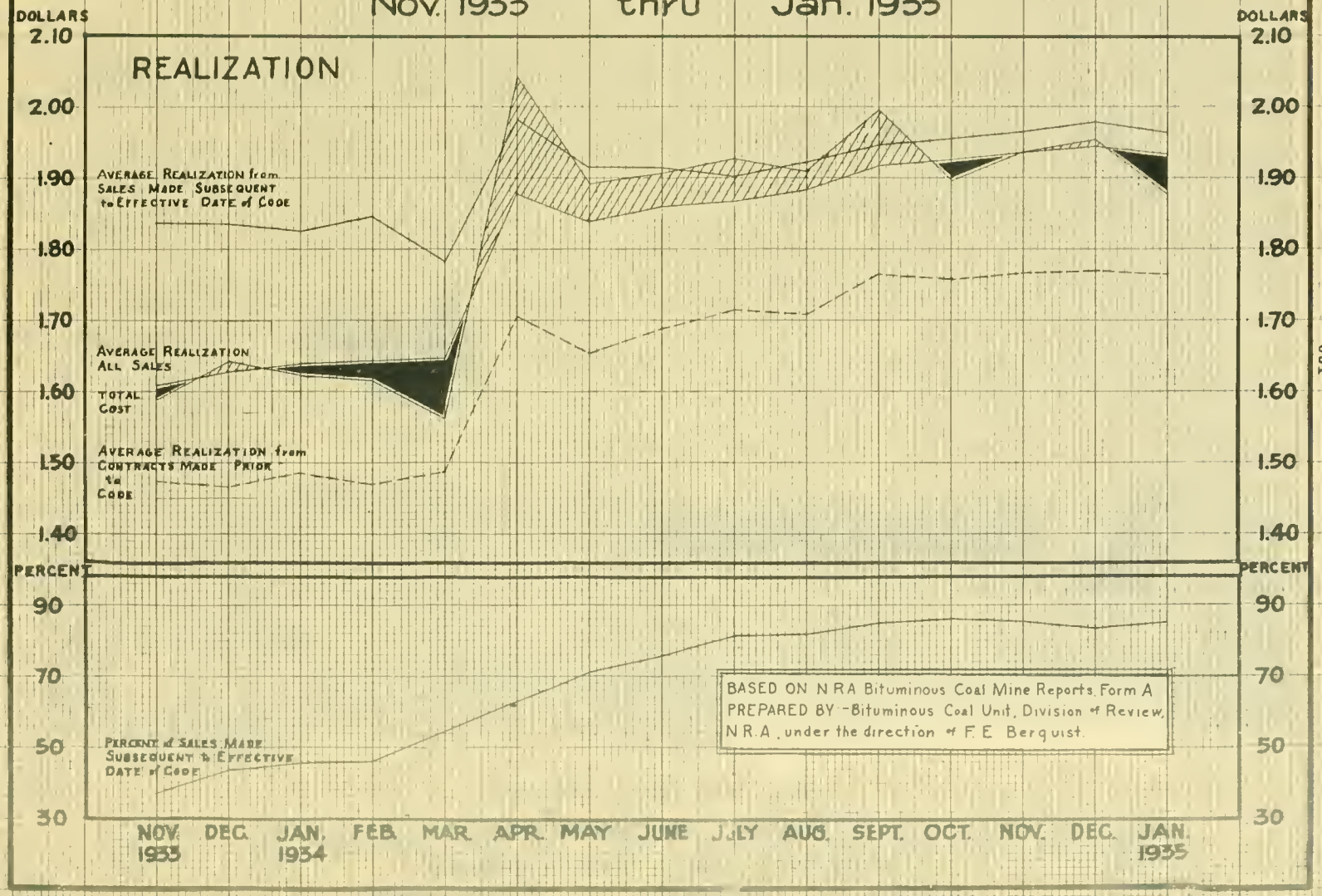
Chart No. 2 — Division I North

Bituminous Coal — Cost, Realization, and Margins by Months
Nov. 1933 thru Jan. 1935



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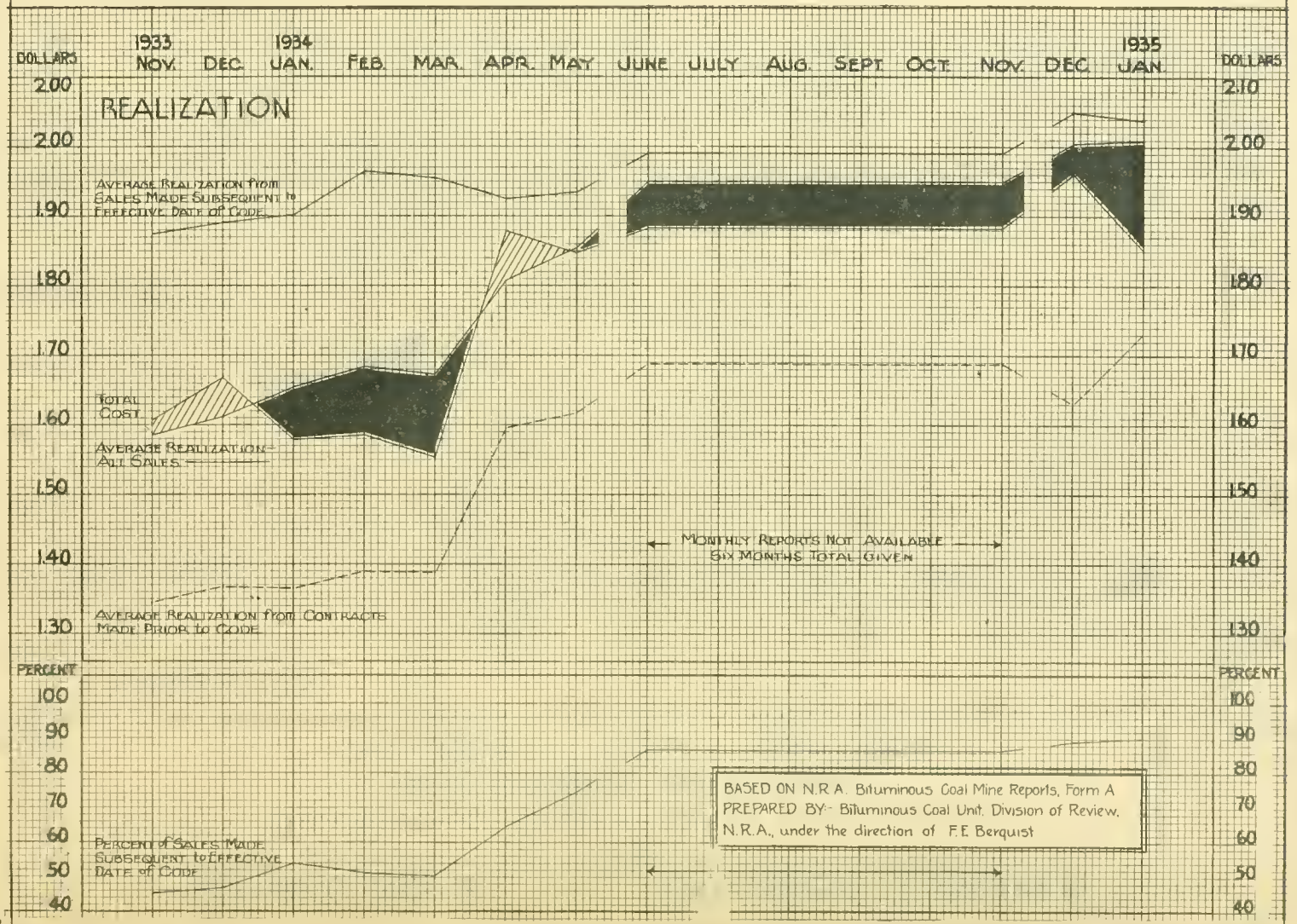
9837

CHART NO. 3 DIVISION I SOUTH

BITUMINOUS COAL - COST, REALIZATION, AND MARGINS, BY MONTHS

NOV. 1933 THRU JAN. 1935



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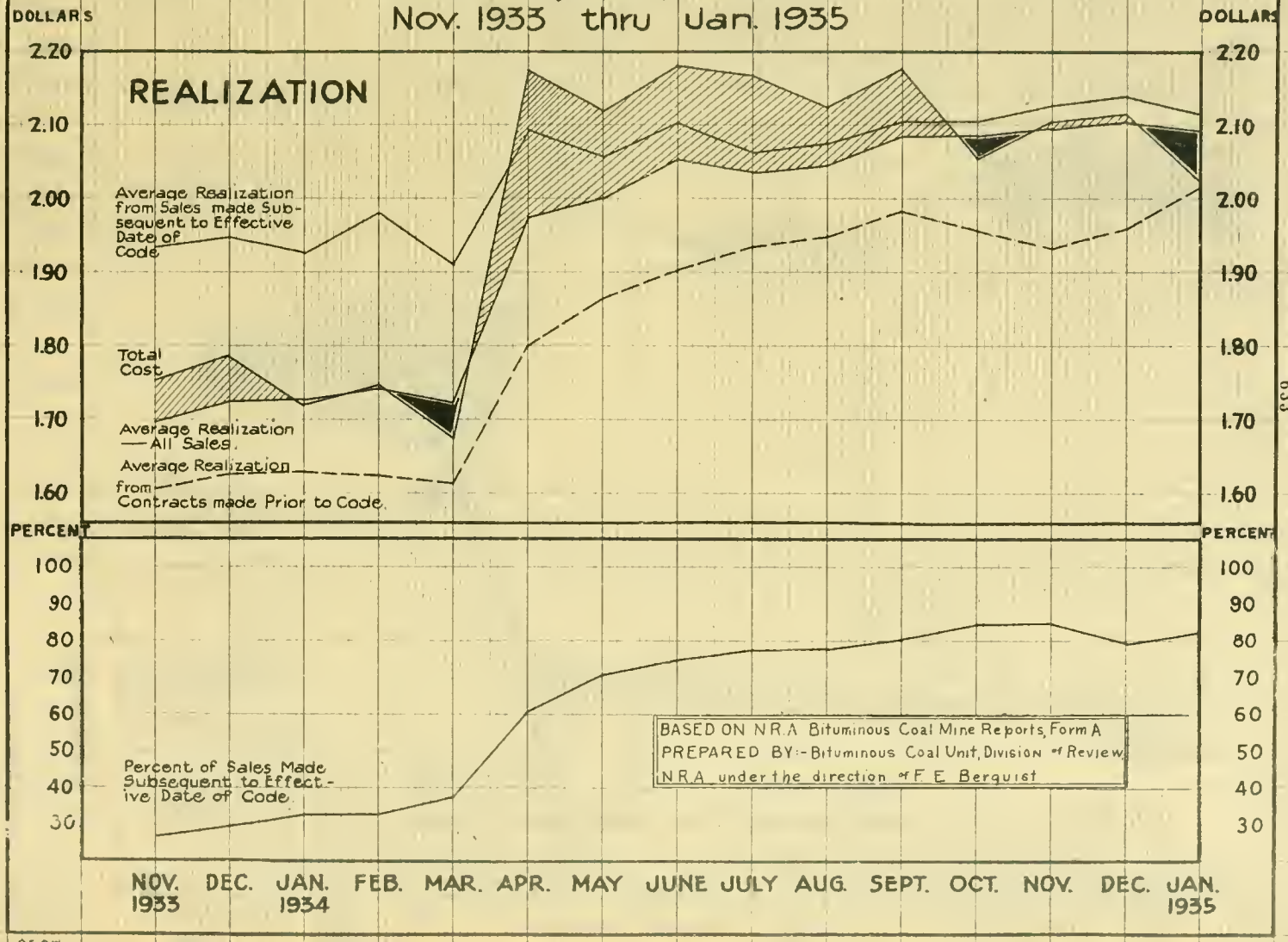
APPENDIX III

Chart No. 4 — Eastern Sub-Division

Bituminous Coal — Cost, Realization, and Margins by Months Nov. 1933 thru Jan. 1935

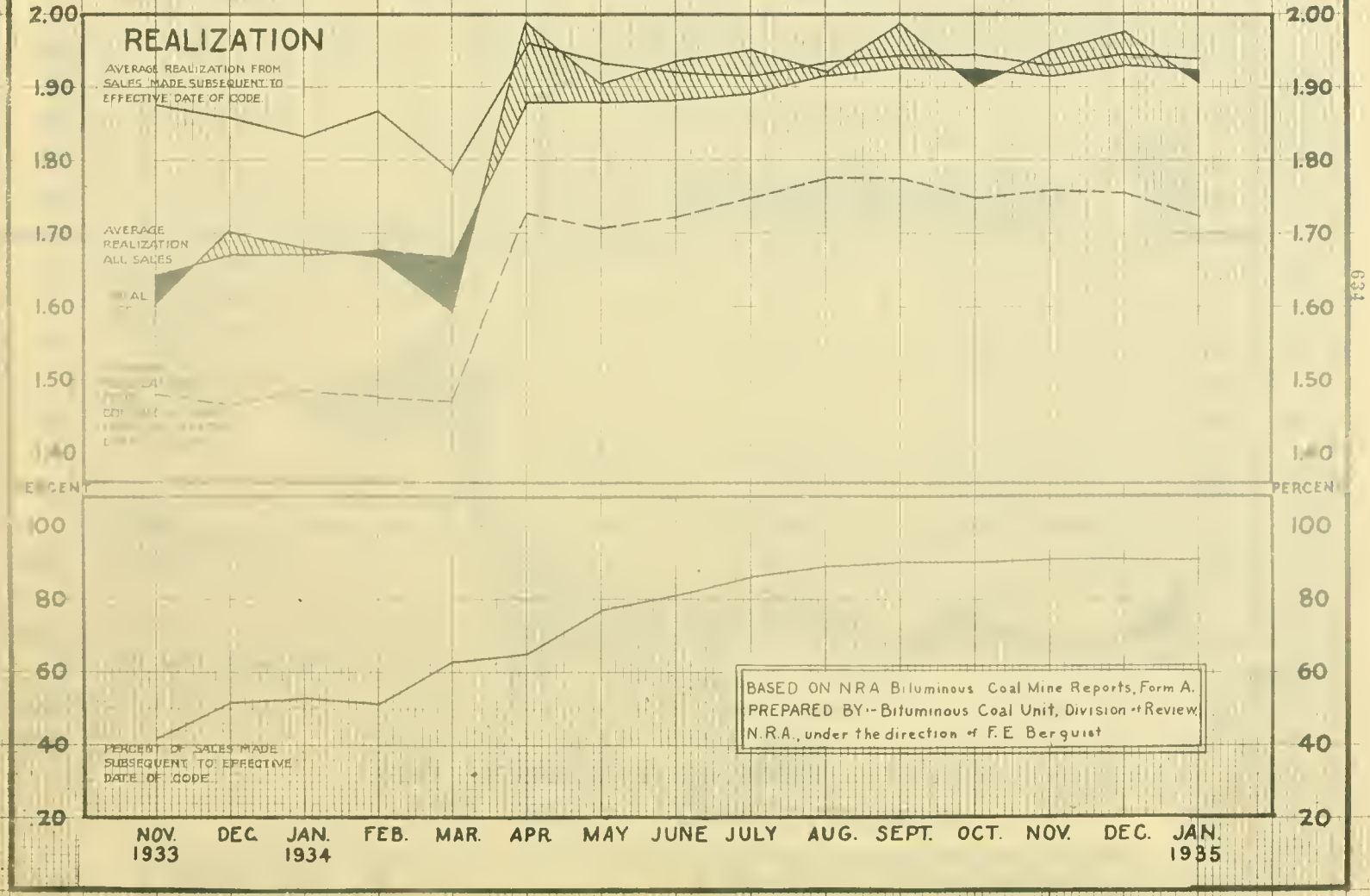


633

9637

Chart No. 5 — Western Pennsylvania

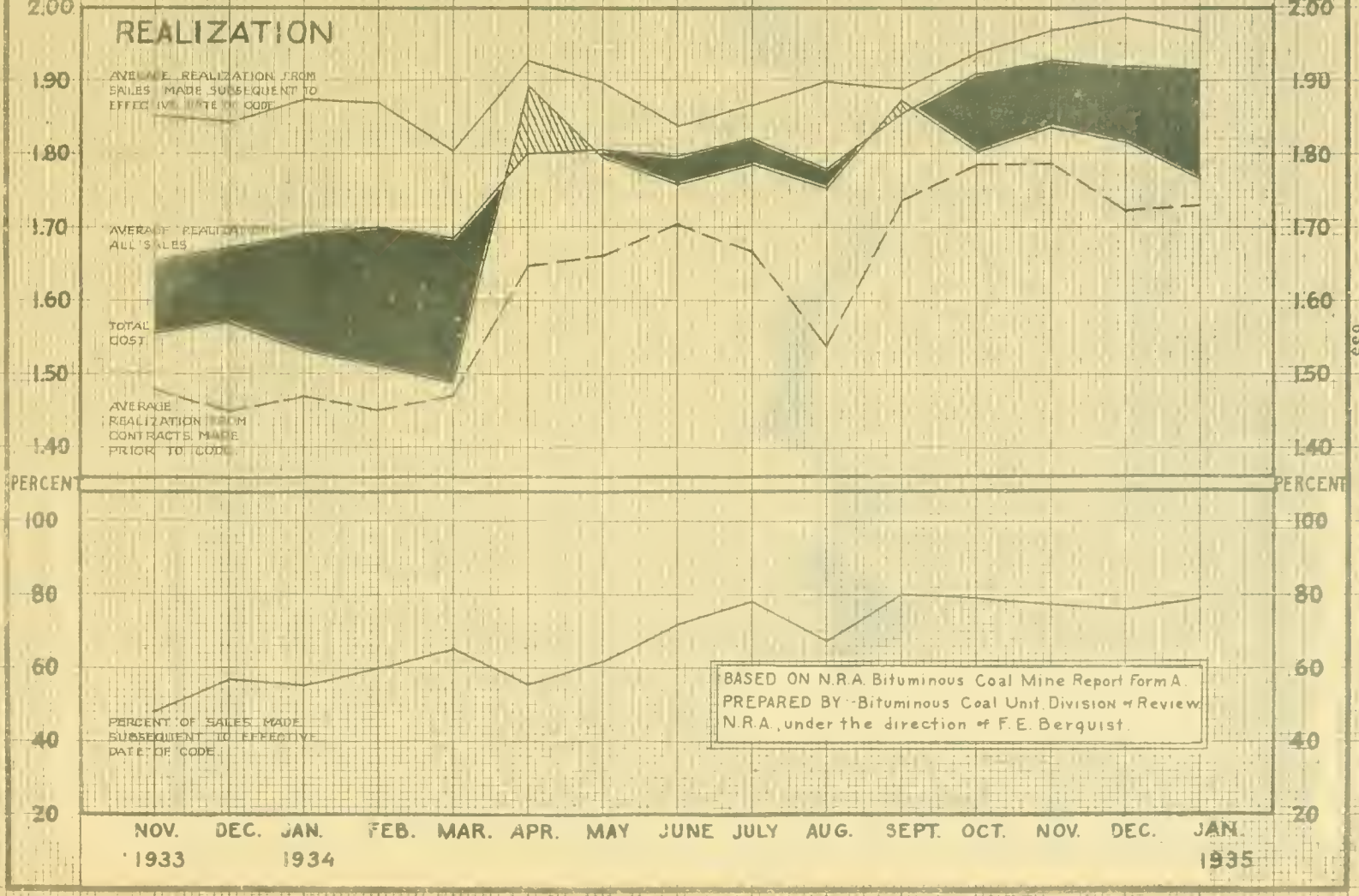
Bituminous Coal — Cost, Realization, and Margins by Months Nov 1933 thru Jan. 1935



9637

Chart No. 6 — Ohio

Bituminous Coal — Cost, Realization, and Margins by Months Nov. 1933 thru Jan. 1935



9537

Chart No. 7 Panhandle

Bituminous Coal — Cost, Realization, and Margins by Months Nov. 1933 thru Jan. 1935

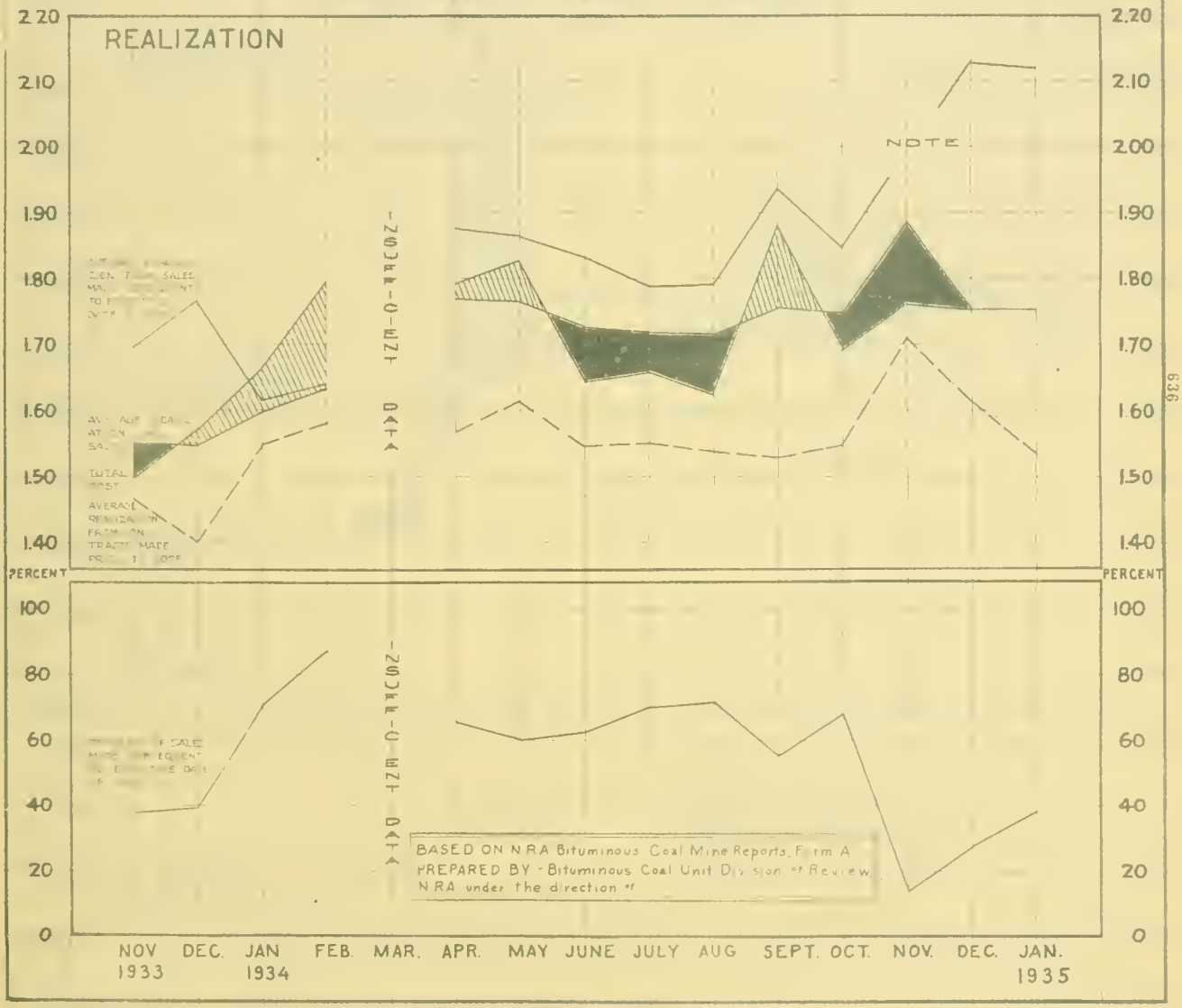


Chart No. 8 Northern West Virginia

Bituminous Coal — Cost, Realization, and Margins by Months Nov. 1933 thru Jan. 1935

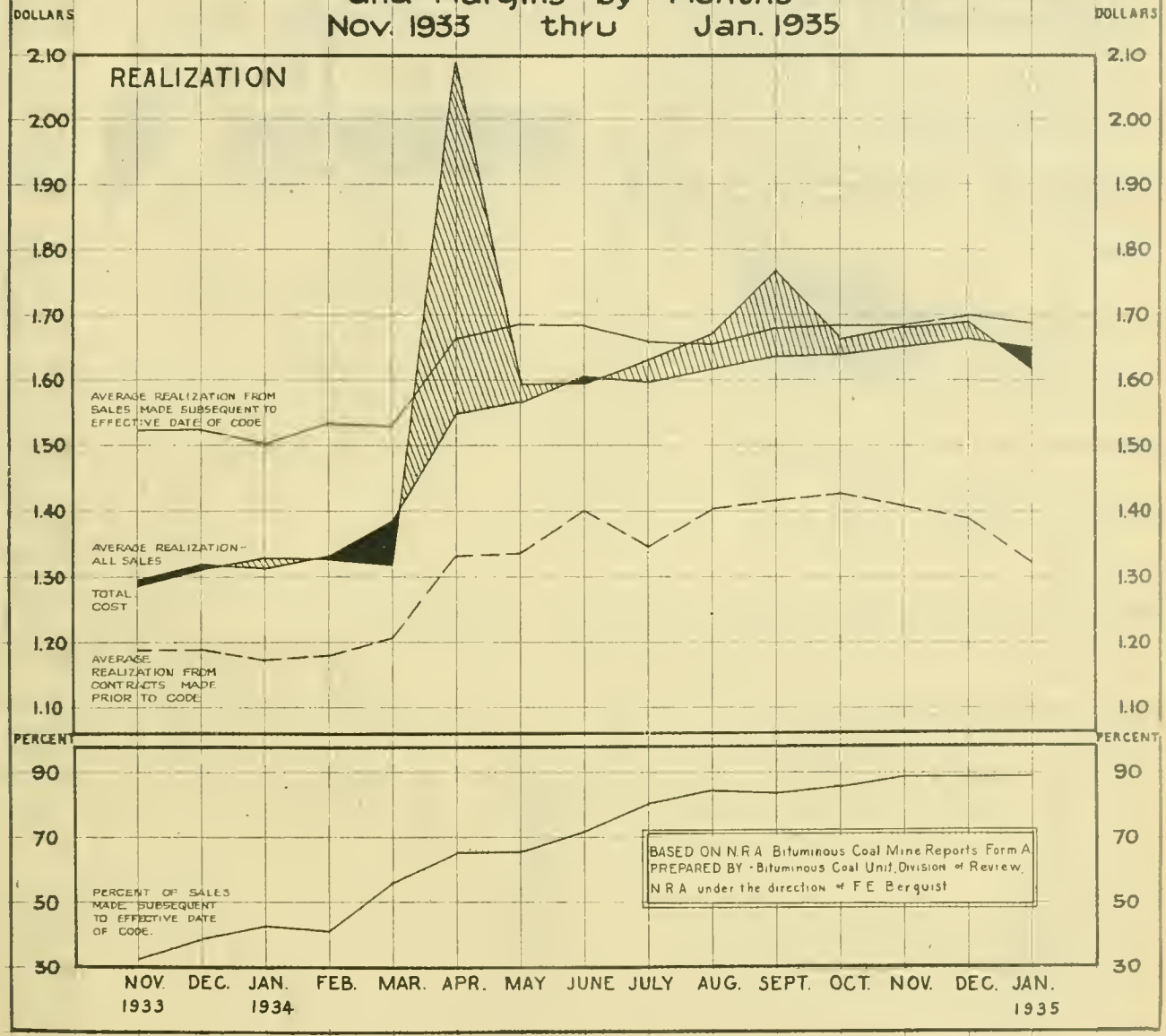


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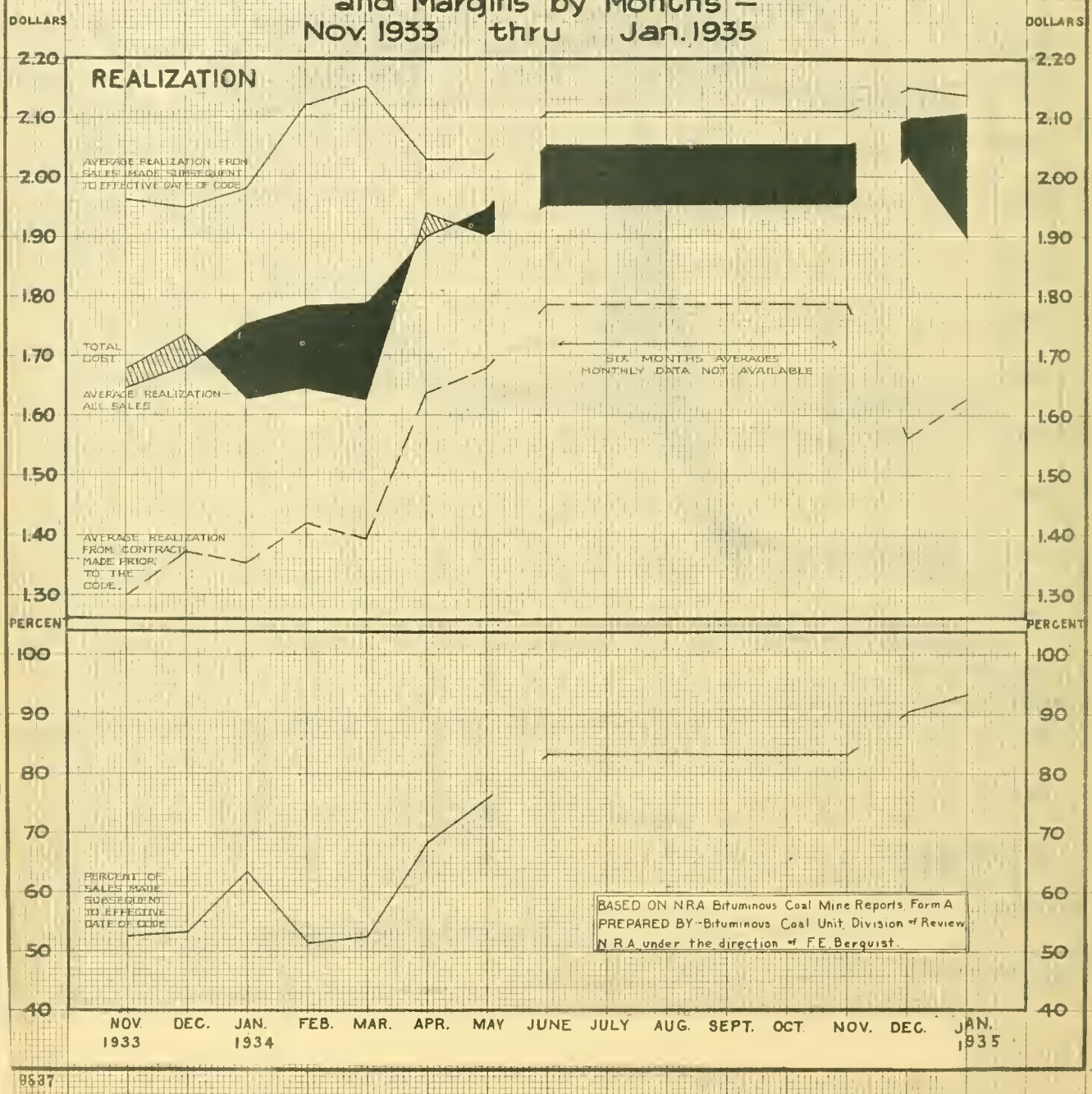
Chart No. 9 Southern Sub. No. I

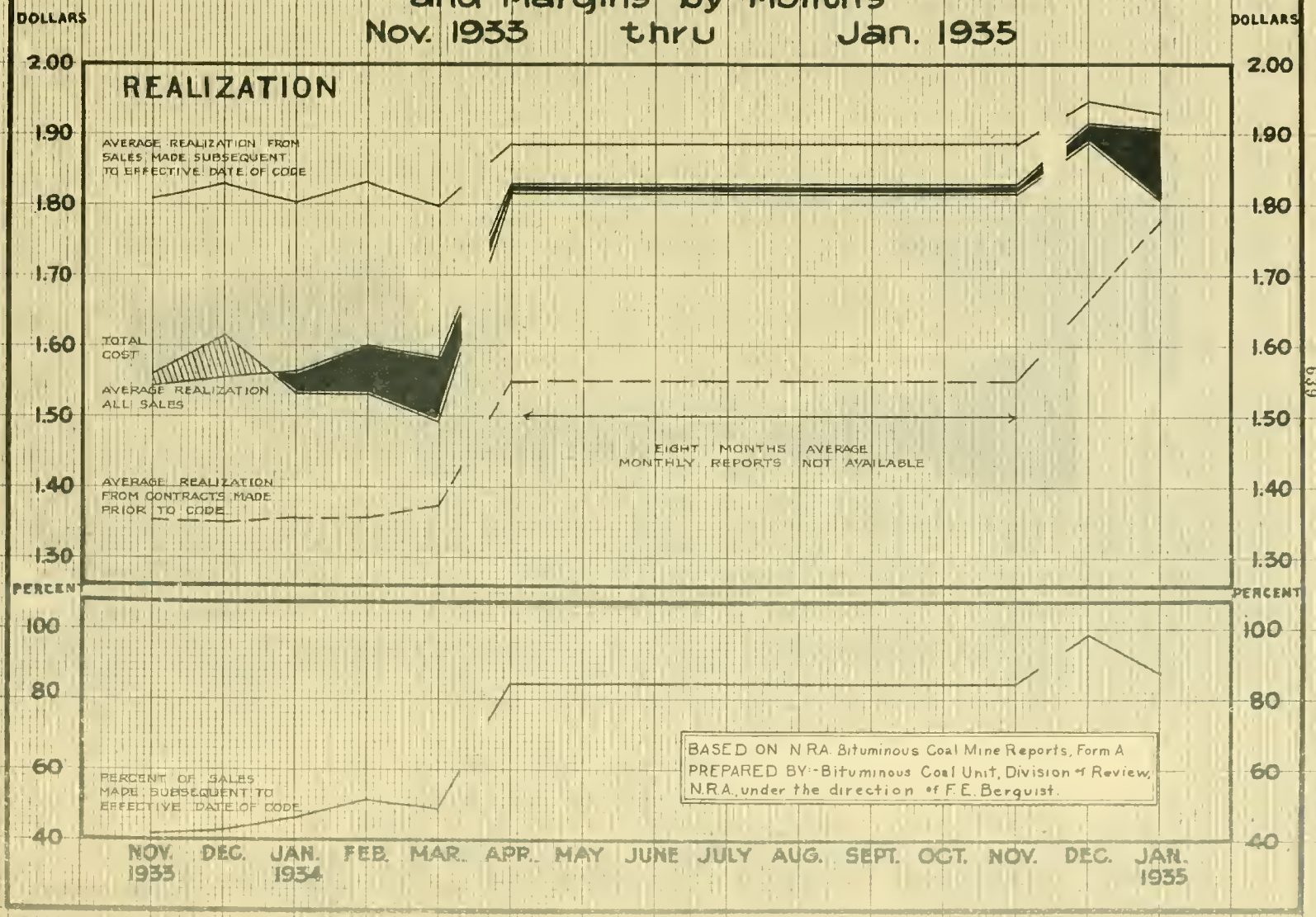
Bituminous Coal — Cost, Realization, and Margins by Months — Nov. 1933 thru Jan. 1935



BASED ON N.R.A. Bituminous Coal Mine Reports, Form A
PREPARED BY:-Bituminous Coal Unit, Division of Review, N.R.A. under the direction of F.E. Berquist.

Chart No. 10 Southern Sub. No. 2

Bituminous Coal — Cost, Realization, and Margins by Months
Nov. 1933 thru Jan. 1935



BASED ON N.R.A. Bituminous Coal Mine Reports, Form A
PREPARED BY:- Bituminous Coal Unit, Division of Review, N.R.A. under the direction of F.E. Berquist.

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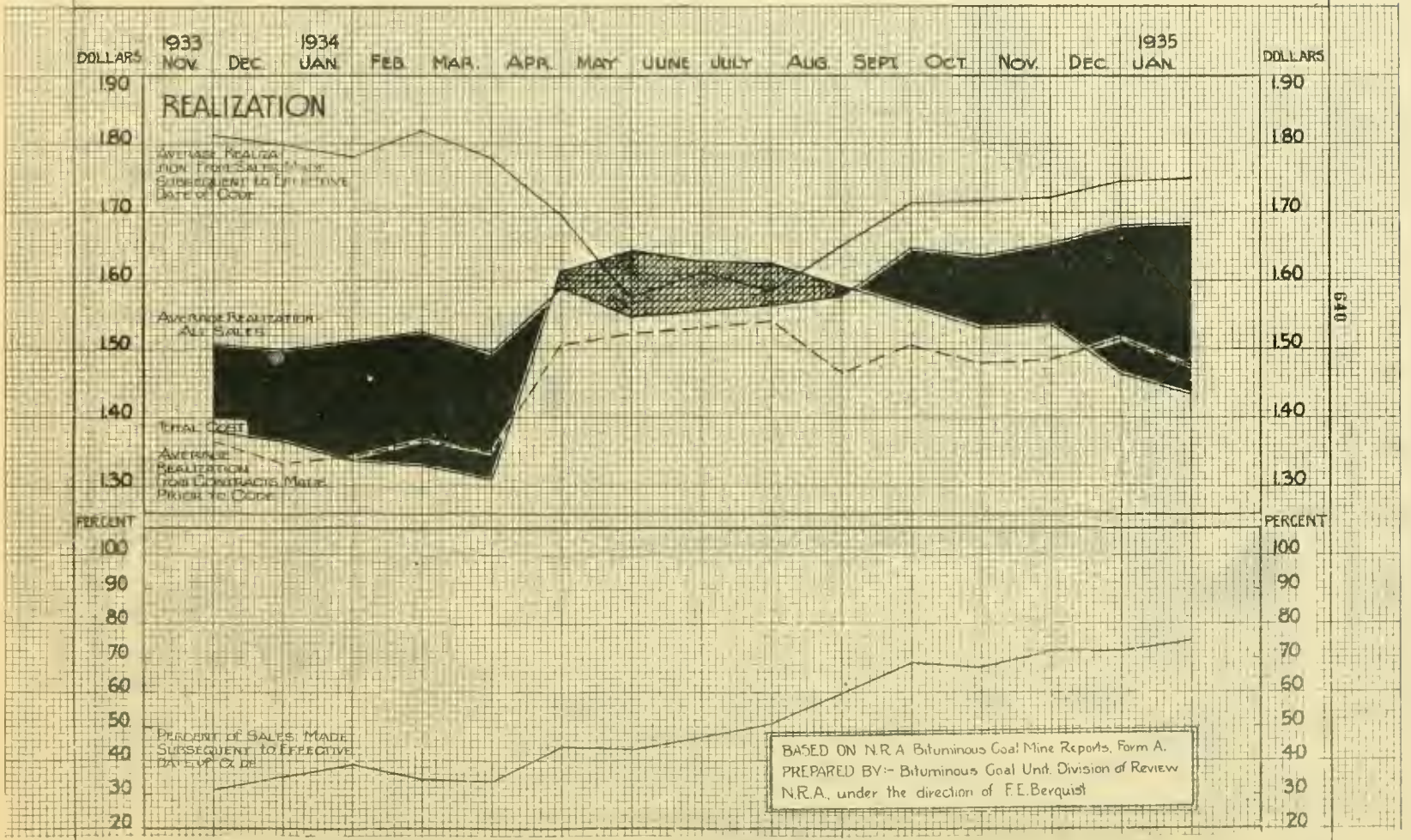
CHART NO. II, DIVISION II DEEP AND STRIP MINES COMBINED (EXCEPTING IOWA)

BITUMINOUS COAL — COST, REALIZATION, AND MARGINS BY MONTHS

NOV. 1933 THRU JAN. 1935

APPENDIX III



9637

Chart No. 12 Division II Indiana — Deep and Strip Mines Combined

Bituminous Coal — Cost, Realization and Margins by Months Nov. 1933 thru Jan. 1935

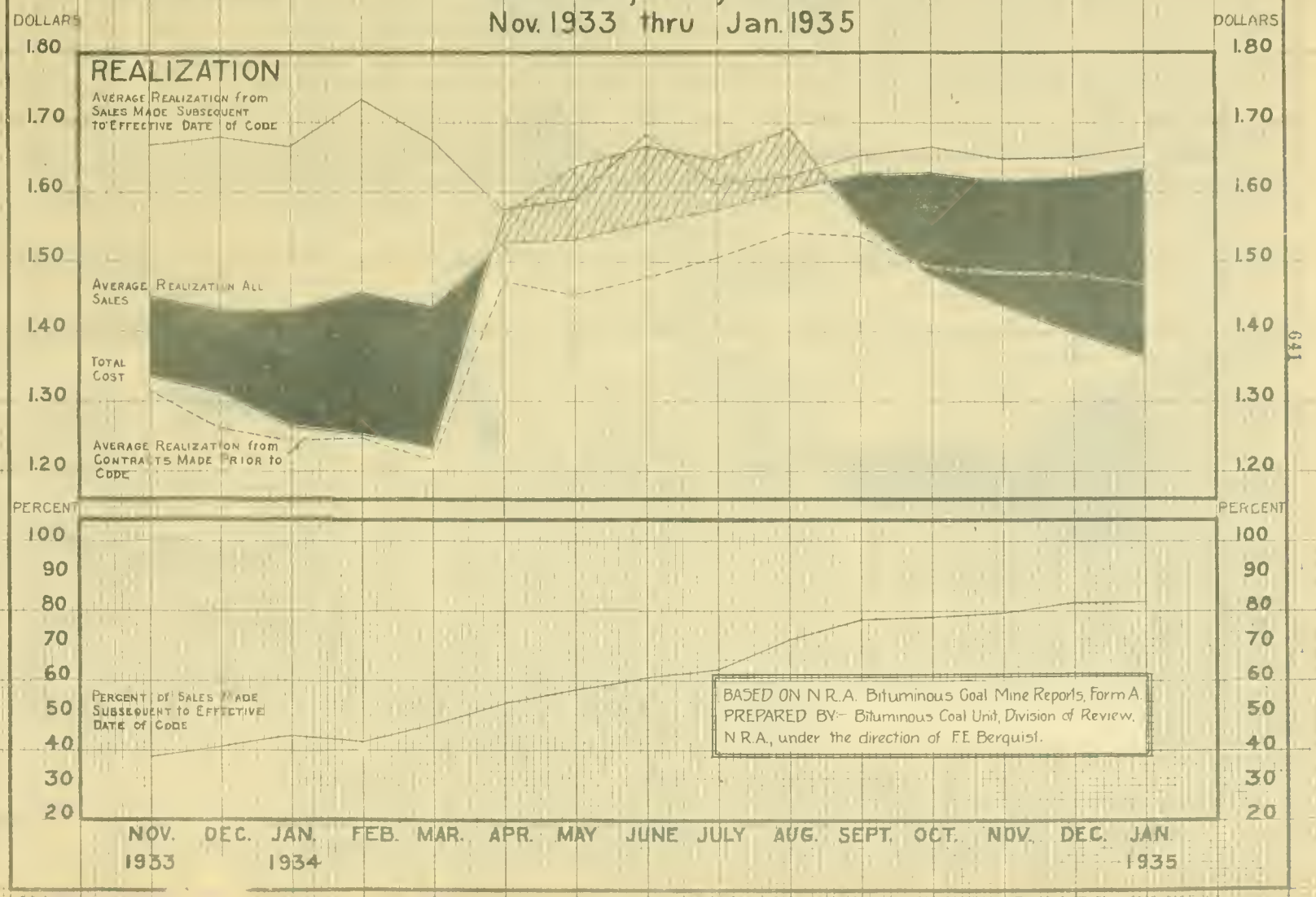


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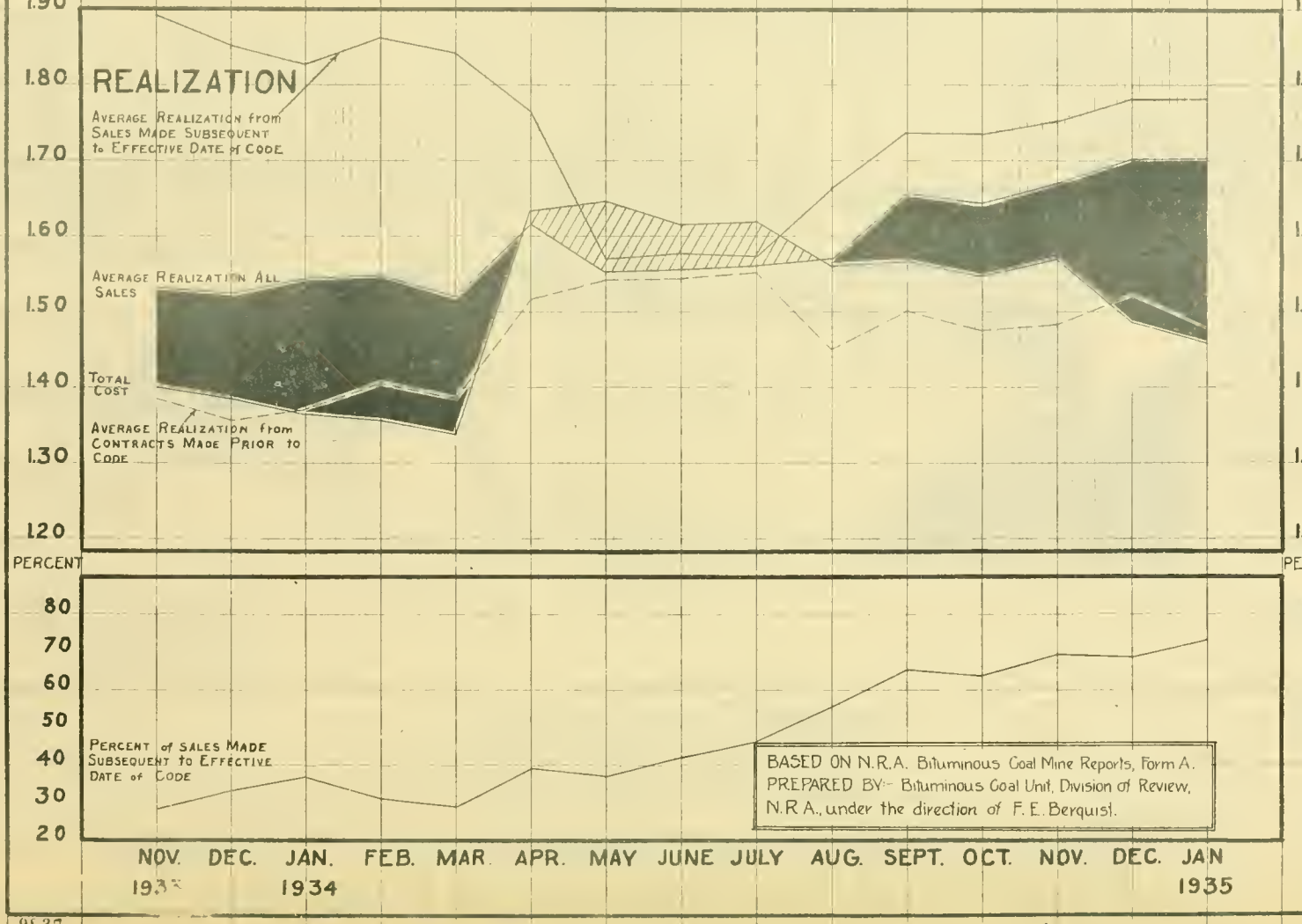
Chart No. 13 Division II Illinois – Deep and Strip Mines Combined

Bituminous Coal — Cost, Realization, and Margins by Months Nov. 1933 thru Jan. 1935

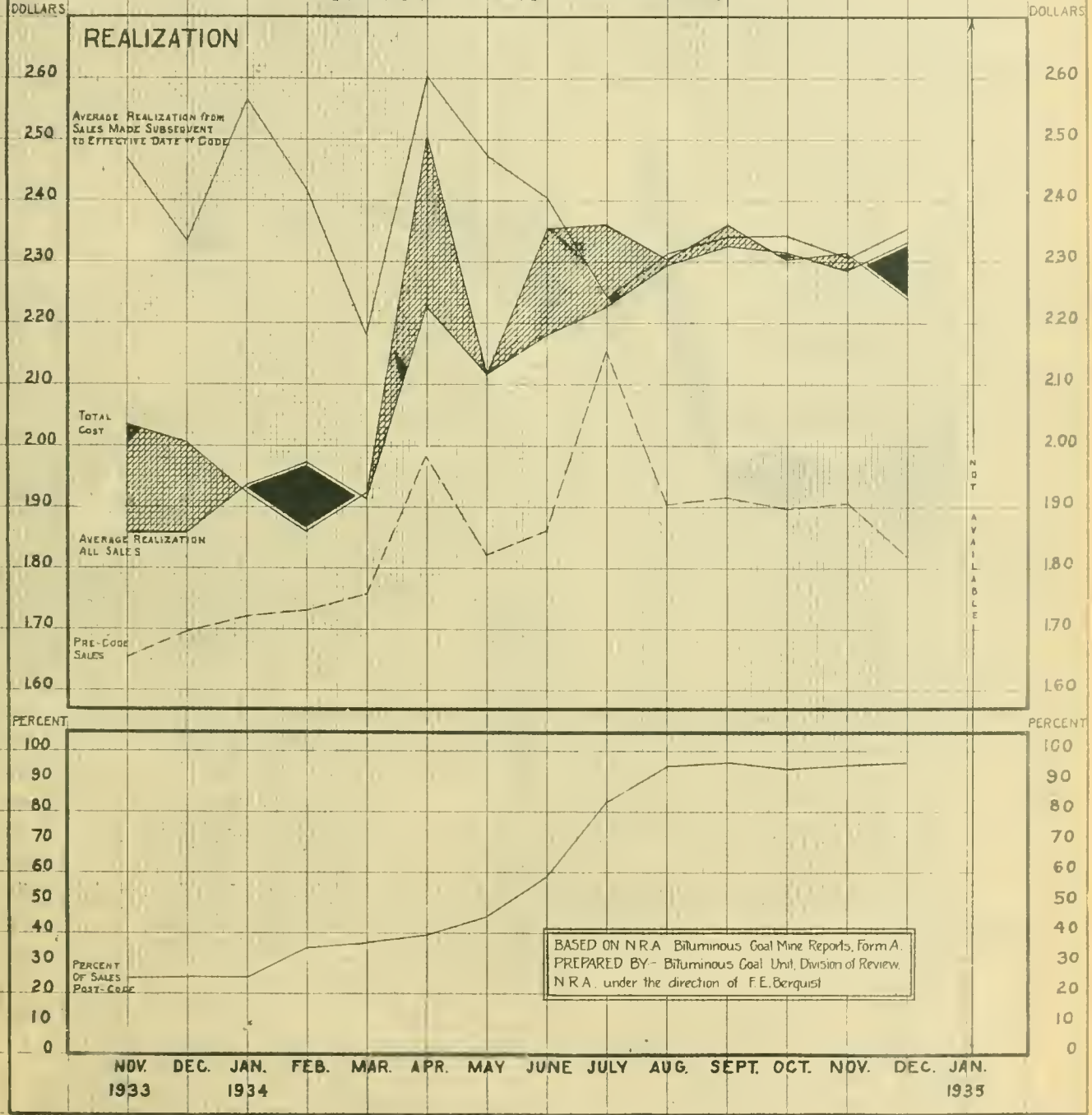


9537

642

Chart No. 14 — Division III

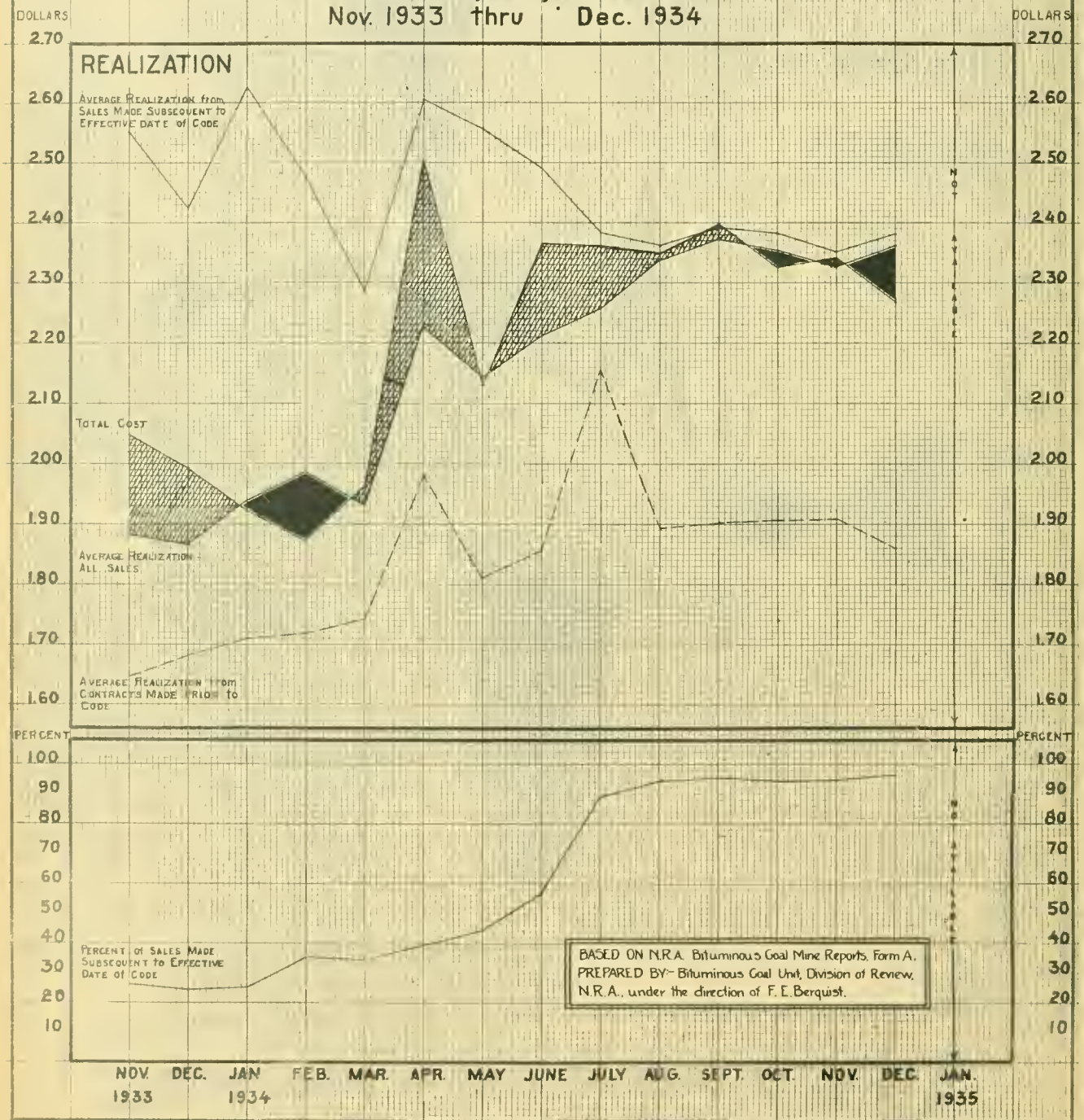
Bituminous Coal — Cost, Realization, and Margins by Months Nov. 1933 thru Dec. 1934



APPENDIX III

Chart No 15 Division III Alabama

Bituminous Coal – Cost Realization and Margins by Months Nov. 1933 thru Dec. 1934



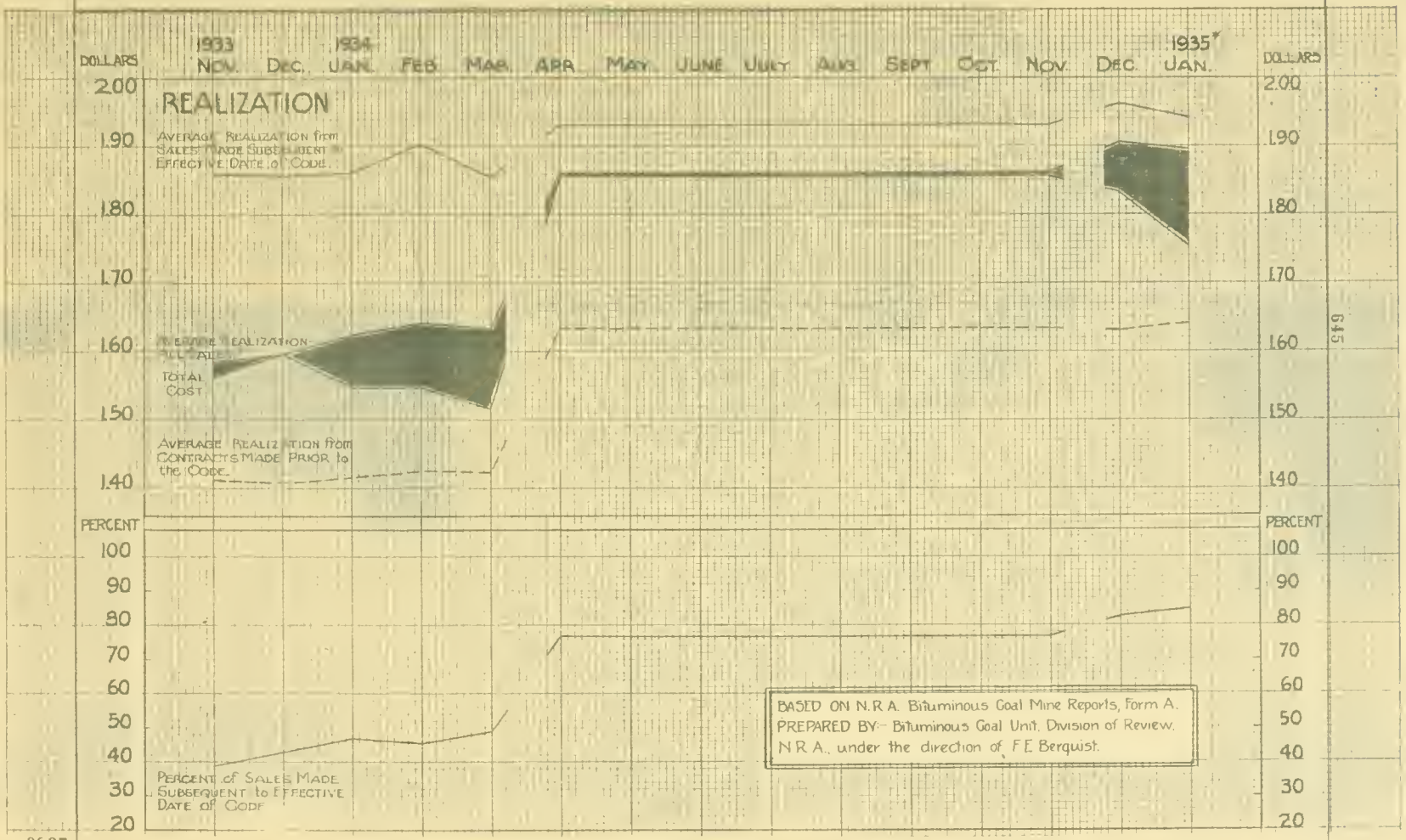
9637

CHART NO. 16 DIVISION I, II, III

APPENDIX III

BITUMINOUS COAL — COST, REALIZATION, AND MARGINS BY MONTHS

NOV. 1933 THRU JAN. 1935



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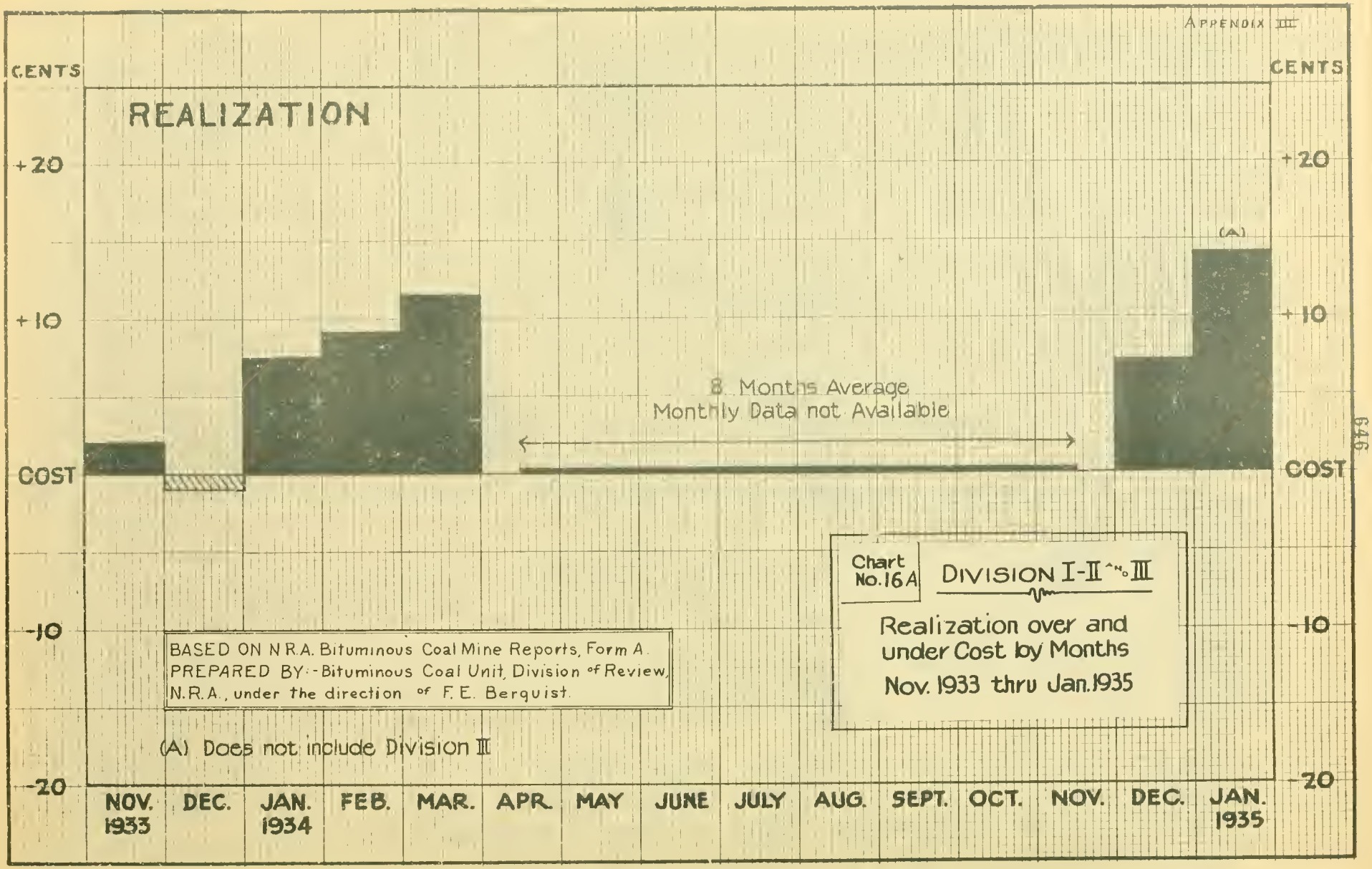
CENTS
REALIZATION
+20
+10
COST
-10
-20
8 Months Average
Monthly Data not Available
(A)
BASED ON N.R.A. Bituminous Coal Mine Reports, Form A.
PREPARED BY:- Bituminous Coal Unit, Division of Review, N.R.A., under the direction of F. E. Berquist.
(A) Does not include Division II
Chart No. 16A
DIVISION I-II and III
Realization over and under Cost by Months
Nov. 1933 thru Jan. 1935
NOV. 1933
DEC.
JAN. 1934
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
JAN. 1935

9687

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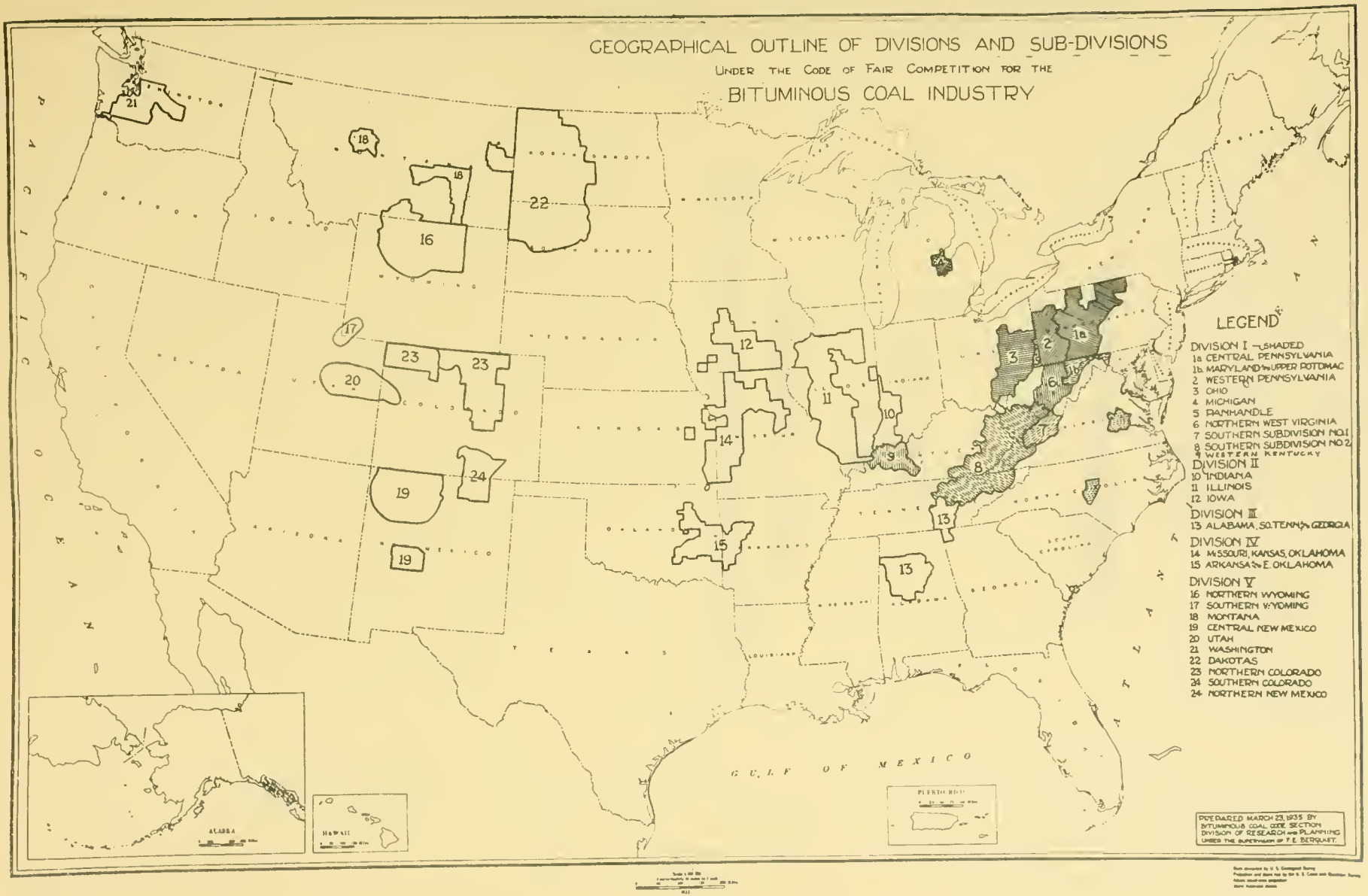
GEOGRAPHICAL OUTLINE OF DIVISIONS AND SUB-DIVISIONS

UNDER THE CODE OF FAIR COMPETITION FOR THE

BITUMINOUS COAL INDUSTRY



PREPARED MARCH 23, 1935 BY
BITUMINOUS COAL CODE SECTION
DIVISION OF RESEARCH AND PLANNING
UNDER THE SUPERVISION OF P.E. BERQUIST.

APPENDIX TO

CHAPTER III.

PRODUCTION AND DISTRIBUTION

ECONOMIC SURVEY

OF THE

BITUMINOUS COAL INDUSTRY

UNDER FREE COMPETITION AND CODE REGULATION

BITUMINOUS COAL PRODUCTION. REALIZATION AND MINE CAPACITY IN THE UNITED STATES, 1899 - 1934

Year	Production (Millions of Net Tons)	Average Number of days Worked	Calculated Capacity (Millions of Net Tons) at 308 days	at 280 days	Average Value Per Net Ton
1899	193	234	254	230	$0.87
1900	212	234	279	255	1.04
1901	226	225	309	281	1.05
1902	260	230	348	316	1.12
1903	235	225	387	350	1.24
1904	279	202	425	386	1.10
1905	315	211	460	417	1.06
1906	343	213	496	451	1.11
1907	395	234	520	473	1.14
1908	333	193	531	482	1.12
1909	380	209	560	510	1.07
1910	417	217	592	538	1.12
1911	406	211	593	538	1.11
1912	450	223	622	566	1.15
1913	478	232	635	577	1.18
1914	423	195	638	608	1.17
1915	443	203	672	610	1.13
1916	503	210	675	613	1.32
1917	552	243	699	636	2.26
1918	579	249	717	650	2.58
1919	466	195	736	669	2.49
1920	569	220	796	725	3.75
1921	416	149	860	781	2.89
1922	422	142	916	832	3.02
1923	565	179	970	885	2.68
1924	484	171	871	792	2.20
1925	520	195	822	748	2.04
1926	573	215	821	747	2.06
1927	518	191	835	759	1.99
1928	501	203	760	691	1.86
1929	535	219	752	679	1.78
1930	468	187	770	700	1.70
1931	382	160	736	669	1.54
1932	310	146	653	594	1.31
1933	334	167	615	559	1.34
1934*	358	178	622	565	1.75

* Capacity under NRA conditions and working time

Source: U. S. Bureau of Mines

Prepared by Bituminous Coal Unit
Division of Review, NRA
under direction of F. E. Berquist

BITUMINOUS COAL PRODUCTION, REALIZATION AND MINE CAPACITY IN THE UNITED STATES, 1899 - 1934

Year	Production (Millions of Net Tons)	Average Number of days Worked	Calculated Capacity (Millions of Net Tons at 308 days	at 280 days	Average Value Per Net Ton
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1902	260	230	348	316	1.12
1903	283	225	387	350	1.24
1904	279	202	425	386	1.10
1905	315	211	460	417	1.06
1906	343	213	496	451	1.11
1907	385	234	520	473	1.14
1908	333	193	531	482	1.12
1909	380	209	560	510	1.07
1910	417	217	592	538	1.12
1911	406	211	593	538	1.11
1912	450	223	622	566	1.15
1913	478	232	635	577	1.18
1914	423	195	668	608	1.17
1915	443	203	672	610	1.13
1916	503	230	673	613	1.32
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1933	334	167	615	559	1.34
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* Capacity under NRA conditions and working time

Source: U. S. Bureau of Mines

Prepared by Bituminous Coal Unit
Division of Review, NRA
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1912	450	223	622	566	1.15
1913	478	232	635	577	1.18
1914	423	195	668	603	1.17
1915	443	203	672	610	1.13
1916	503	230	673	613	1.32
1917	552	243	699	636	2.26
1918	579	249	717	650	2.58
1919	466	195	736	669	2.49
1920	569	220	796	725	3.75
1921	416	149	860	781	2.89
1922	422	142	916	832	3.02
1923	565	179	970	885	2.68
1924	484	171	871	792	2.20
1925	520	195	822	748	2.04
1926	573	215	821	747	2.06
1927	518	191	835	759	1.99
1928	501	203	760	691	1.86
1929	535	219	752	679	1.78
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* Capacity under NRA conditions and working time

Source: U. S. Bureau of Mines

Prepared by Bituminous Coal Unit
Division of Review, NRA
under direction of F. E. Berquist

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1905	315	211	460	417	1.06
1906	343	213	496	451	1.11
1907	395	234	520	473	1.14
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1915	443	203	672	610	1.13
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1918	579	249	717	650	2.58
1919	468	195	736	669	2.49
1920	569	220	796	725	3.75
1921	416	149	860	781	2.89
1922	422	143	916	832	3.02
1923	565	179	970	885	2.68
1924	484	171	871	792	2.20
1925	520	195	822	748	2.04
1926	573	215	831	747	2.06
1927	518	191	835	759	1.99
1928	501	203	760	691	1.86
1929	635	219	752	679	1.78
1930	468	187	770	700	1.70
1931	382	160	736	669	1.54
1932	310	146	653	594	1.31
1933	334	167	615	559	1.34
1934*	358	178	622	565	1.75

* Capacity under NRA conditions and working time

Source: U. S. Bureau of Mines

Prepared by Bituminous Coal Unit
Division of Review, NRA
under direction of F. K. Berquist

ANNUAL BITUMINOUS COAL PRODUCTION: STATE TOTALS AND THEIR PROPORTIONS OF TOTAL UNITED STATES, 1913 - 1938.

		1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1938 (Preliminary)
Alabama	Tons	17,678,522	15,993,422	14,927,937	16,086,197	20,068,074	19,184,962	19,536,721	26,294,999	12,568,999	18,324,740	20,457,649	19,130,184	20,004,393	21,000,962	19,765,866	17,621,362	17,943,923	15,870,058	11,958,781	7,856,939	9,759,989	9,996,000
	Per cent	3.7	3.7	3.4	3.6	3.6	3.3	3.5	2.9	3.0	4.3	3.6	4.0	3.9	3.7	3.2	3.5	3.4	3.3	3.2	2.5	2.6	2.7
Arkansas	Tons	2,234,107	1,636,540	1,652,106	1,994,915	2,143,579	2,227,369	1,429,020	2,103,596	1,227,777	1,110,046	1,296,892	1,451,503	1,220,039	1,499,017	1,548,834	1,660,973	1,695,108	1,533,434	1,193,955	1,033,471	882,924	2,864,000 a/
	Per cent	0.5	0.5	0.4	0.4	0.6	0.6	0.3	0.4	0.3	0.3	0.2	0.3	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.6
Colorado	Tons	9,232,510	8,170,559	8,624,980	10,484,837	12,483,336	12,407,571	10,323,420	12,278,225	9,122,760	10,019,997	10,346,218	10,444,098	10,310,853	10,637,225	9,724,079	9,847,707	9,920,741	9,196,910	6,604,369	5,998,721	5,229,767	5,164,000
	Per cent	1.9	1.9	1.9	2.1	2.3	2.1	2.2	2.1	2.2	2.4	1.8	2.2	2.0	1.9	1.9	2.0	1.9	1.8	1.7	1.2	1.6	1.3
Georgia	Tons	295,626	166,498	134,496	173,594	139,028	66,716	53,357	90,156	33,815	60,636	75,620	74,947	66,174	99,869	76,712	58,390	44,436	7,092	21,580	27,208	41,582	47,000 b/
	Per cent	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Illinois	Tons	61,618,748	57,589,197	58,829,576	66,195,336	86,199,347	89,291,105	60,862,608	88,724,893	69,602,763	98,467,736	79,310,075	68,323,281	86,909,339	69,366,923	46,848,224	55,948,199	60,657,640	53,731,230	44,303,295	33,474,553	37,413,145	40,905,000
	Per cent	12.9	13.6	13.3	13.2	15.6	15.4	13.1	15.6	16.7	13.8	14.1	14.1	12.9	12.1	9.0	11.2	11.3	11.5	11.6	10.8	11.2	11.4
Indiana	Tons	17,165,671	16,641,132	17,006,152	20,093,528	26,539,329	30,678,634	20,912,288	29,350,585	20,319,509	19,132,889	26,279,099	21,480,213	23,224,966	23,186,006	17,939,758	16,378,580	18,344,238	16,489,962	14,295,163	13,323,573	13,761,052	14,820,000
	Per cent	3.6	3.9	3.8	4.0	4.8	5.3	4.5	5.2	4.9	4.5	4.7	4.5	4.1	4.0	3.5	3.4	3.4	3.5	3.7	4.3	4.1	4.2
Iowa	Tons	7,525,936	7,451,022	7,614,143	7,260,800	8,965,830	8,192,195	5,624,692	7,813,916	4,531,392	4,338,161	5,710,735	5,468,490	4,714,243	4,625,447	2,949,622	3,683,655	4,241,069	3,892,571	3,388,355	3,862,433	3,194,983	3,345,000
	Per cent	1.6	1.8	1.7	1.5	1.6	1.4	1.2	1.4	1.1	1.0	1.0	1.1	0.9	0.8	0.6	0.7	0.8	0.8	0.9	1.1	1.0	0.9
Kansas	Tons	7,202,210	6,860,988	6,824,474	6,881,455	7,184,975	7,561,947	5,224,724	5,926,808	3,466,641	2,955,170	4,443,149	4,247,733	4,524,251	4,416,480	3,443,762	2,809,724	2,975,977	2,429,529	1,986,870	1,352,845	2,217,622	3,800,000 a/
	Per cent	1.5	1.6	1.6	1.4	1.3	1.3	1.1	1.0	0.8	0.7	0.8	0.9	0.9	0.8	0.7	0.6	0.6	0.5	0.5	0.6	0.7	1.6
Kentucky	Tons	19,616,600	20,382,763	21,361,674	25,393,997	27,807,977	31,612,617	30,036,061	35,690,762	31,588,270	42,134,175	44,777,317	45,147,204	55,068,670	62,924,462	69,125,992	61,860,379	60,462,600	51,208,995	39,363,621	35,299,582	36,099,785	38,068,000
	Per cent	4.1	4.8	4.8	5.1	5.0	5.5	6.5	6.3	7.6	10.0	7.9	9.3	10.6	11.0	13.4	12.4	11.3	11.0	10.3	11.6	10.9	10.6
Maryland	Tons	4,779,839	4,133,547	4,180,477	4,860,046	4,765,924	4,497,297	3,021,686	4,065,239	1,627,740	1,222,707	2,285,926	2,133,705	2,694,572	3,978,353	2,514,842	2,686,979	2,649,114	2,270,593	2,005,773	1,428,937	1,530,748	1,660,000
	Per cent	1.0	1.0	0.9	0.9	0.9	0.8	0.6	0.7	0.4	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0 5	0.5	0.5	0.5	0.5	0.5
Michigan	Tons	1,231,786	1,283,030	1,356,138	1,180,360	1,374,805	1,464,818	996,545	1,489,765	1,141,715	329,390	1,172,075	831,020	808,233	646,707	756,763	617,442	804,869	661,113	359,403	446,149	406,548	651,000
	Per cent	0.2	0.3	0.3	0.2	0.3	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.2
Missouri	Tons	4,318,125	3,935,980	3,811,995	4,742,146	5,670,589	5,667,730	3,979,798	5,369,565	3,551,621	2,928,730	3,803,151	2,480,880	2,694,215	3,008,495	3,064,343	3,732,421	4,030,311	3,853,150	3,620,497	4,069,992	3,432,212	b/
	Per cent	0.9	0.9	0.9	0.9	1.0	1.0	0.9	0.9	0.9	0.7	0.6	0.5	0.5	0.5	0.6	0.7	0.8	0.8	0.9	1.3	1.0	
Montana	Tons	3,240,975	2,805,173	2,789,755	3,632,527	4,226,689	4,532,505	3,236,369	4,413,866	2,733,958	2,572,221	3,147,672	2,905,365	3,043,686	2,797,760	3,143,638	3,324,195	3,407,526	3,022,004	2,373,052	2,125,225	2,152,207	2,600,000
	Per cent	0.7	0.7	0.6	0.7	0.8	0.8	0.7	0.8	0.7	0.6	0.6	0.6	0.6	0.5	0.6	0.7	0.6	0.7	0.6	0.7	0.6	0.7
New Mexico	Tons	3,708,806	3,877,689	3,817,940	3,793,011	4,000,527	4,023,239	3,138,756	3,683,440	2,453,482	3,147,173	2,915,175	2,786,063	2,556,851	2,817,923	2,935,539	2,711,851	2,622,769	1,969,433	1,552,822	1,263,386	1,226,236	1,250,000
	Per cent	0.8	0.9	0.9	0.8	0.7	0.7	0.7	0.6	0.6	0.7	0.5	0.6	0.5	0.5	0.6	0.6	0.5	0 4	0.4	0.4	0.4	0.4
North Carolina	Tons	-	-	-	-	-	1,420	6,949	11,540	23,438	78,570	36,019	57,094	65,153	57,939	53,377	60,860	52,180	28,500	2,163	1,900	2,014	
	Per cent	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	v
North Dakota	Tons	495,320	506,685	528,078	634,912	790,548	719,733	840,999	948,625	864,903	1,327,564	1,385,400	1,200,527	1,324,620	1,370,244	1,527,939	1,649,930	1,862,130	1,700,157	1,539,307	1,739,658	1,782,272	1,830,000 b/
	Per cent	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.2	0.3	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5
Ohio	Tons	36,200,527	32,843,119	32,434,691	38,728,239	40,748,738	45,812,943	35,876,682	45,878,191	31,942,776	26,953,791	40,546,443	30,473,007	28,034,212	27,872,488	15,739,697	19,641,225	23,689,477	22,551,978	20,410,995	13,909,451	19,584,763	20,842,000
	Per cent	7.6	8.5	7.4	6.9	7.4	7.9	7.7	8.1	7.7	6.4	7.2	6.3	5.4	4.9	3.1	3.1	4.4	4.2	5.4	4.5	5.9	5.2
Oklahoma	Tons	4,165,770	3,988,613	3,693,580	3,608,011	4,386,844	4,813,447	3,802,113	4,849,288	3,362,623	2,802,511	2,885,038	2,329,615	2,325,840	2,842,673	3,818,054	3,501,325	3,774,080	2,793,954	1,908,394	1,255,466	1,258,244	
	Per cent	0.9	1.0	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.7	0.5	0.5	0.4	0.5	0.7	0.7	0.7	0.6	0.5	0.4	0.4	v
Pennsylvania	Tons	173,781,217	147,943,294	157,995,137	170,295,424	172,848,142	178,550,741	150,758,154	170,607,847	116,013,942	113,148,308	171,879,913	130,633,773	136,928,019	153,041,638	132,964,639	131,202,163	143,516,240	124,462,787	97,658,693	74,715,662	79,295,944	83,227,000
	Per cent	36.3	35.0	33.7	33.9	34.3	30.8	32.4	30.0	27.9	26.8	30.5	27.0	26.3	26.7	25.7	26.2	26.8	26.6	25.6	24.2	23.8	24.9
Tennessee	Tons	6,860,184	5,943,258	5,730,361	6,157,449	6,194,221	6,831,048	5,213,205	6,662,428	4,460,326	4,876,774	6,040,268	4,556,555	5,454,011	5,788,741	5,783,367	5,610,959	5,805,864	5,130,428	4,721,548	3,537,882	3,774,761	4,056,000
	Per cent	1.4	1.4	1.3	1.2	1.1	1.2	1.1	1.2	1.1	1.2	1.1	1.0	1.1	1.0	1.1	1.1	1.0	1.1	1.2	1.1	1.1	1.1
Texas	Tons	2,429,184	2,323,773	2,068,908	1,987,903	2,355,815	2,261,135	1,680,666	1,615,015	972,839	1,106,007	1,187,329	1,147,011	1,008,375	1,091,158	1,326,385	1,182,034	1,100,668	833,872	716,020	636,990	821,873	716,000
	Per cent	0.5	0.6	0.5	0.4	0.4	0.4	0.4	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Utah	Tons	3,258,828	3,105,036	3,108,715	3,567,428	4,125,230	5,136,825	4,631,323	6,005,199	4,078,784	4,992,008	4,720,237	4,488,157	4,690,242	4,373,793	4,781,480	4,842,444	5,160,521	4,257,941	3,350,044	2,852,127	2,674,986	2,418,000
	Per cent	0.7	0.7	0.7	0.7	0.8	1.0	0.9	1.0	1.0	1.2	0.8	0.9	0.9	0.8	0.9	1.0	1.0	0.9	0.9	0.8	0.8	0.7
Virginia	Tons	8,828,068	7,939,535	8,122,296	9,707,474	10,087,091	10,289,808	9,326,830	11,378,606	7,492,578	10,491,174	11,761,643	10,693,464	12,799,443	14,133,386	12,916,042	11,900,933	12,748,306	10,907,177	9,698,680	7,692,180	8,178,642	9,100,000
	Per cent	1.8	1.9	1.8	1.9	1.8	1.8	2.0	2.0	1.8	2.5	2.1	2.2	2.5	2.5	2.5	2.4	2.4	2.3	2.5	2.5	2.5	2.5
Washington	Tons	3,877,891	3,064,820	2,429,095	3,038,568	4,009,902	4,082,222	2,990,447	3,757,093	2,428,722	2,581,165	2,926,392	2,653,667	2,537,890	2,586,568	2,635,062	2,519,901	2,521,127	2,301,928	1,846,461	1,591,426	1,394,068	1,387,000
	Per cent	0.8	0.7	0.6	0.6	0.7	0.7	0.6	0.7	0.6	0.6	0.5	0.6	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4
West Virginia	Tons	71,858,138	71,707,626	77,184,069	86,460,127	86,841,667	89,935,639	79,036,553	89,970,707	72,786,996	80,488,192	107,899,941	101,662,897	122,380,959	143,509,340	145,122,447	132,952,159	138,518,855	121,412,638	101,473,172	85,606,735	94,343,535	98,190,000
	Per cent	14.9	17.0	17.4	17.2	15.7	15.5	17.0	15.8	17.5	19.1	19.1	21.0	23.5	25.0	28.0	26.6	25.9	26.0	26.6	27.7	28.3	27.4
Wyoming	Tons	7,393,066	6,475,293	6,558,028	7,910,647	8,575,619	9,438,688	7,219,738	9,630,271	7,200,666	9,973,724	7,575,031	6,757,468	6,553,232	6,512,286	6,753,656	6,571,683	6,704,790	6,048,133	4,993,685	4,170,963	4,013,167	4,340,000
	Per cent	1.5	1.5	1.5	1.6	1.6	1.6	1.5	1.7	1.7	1.4	1.4	1.4	1.3	1.3	1.3	1.2	1.2	1.3	1.3	1.4	1.2	1.2
Other States c/	Tons	55,691	77,352	63,727	71,791	96,747	103,276	100,383	97,358	121,215	113,920	150,271	128,659	139,940	121,060	149,231	157,517	133,914	160,532	157,990	174,970	173,679	130,000
	Per cent	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total		478,435,297	422,703,970	442,624,426	502,513,682	551,790,363	579,385,420	465,850,058	568,666,683	415,921,950	422,268,099	564,564,662	483,686,538	520,052,741	573,366,985	517,763,352	500,744,979	534,988,393	467,526,299	382,089,396	309,739,872	333,630,533	358,395,000

SOURCE: U. S. Bureau of Mines.

a/ Included with Missouri.
b/ Included with Kansas.
c/ Includes Alaska, Arizona, California, Georgia, Idaho, Nevada, North Carolina, Oregon, and South Dakota, but not all of these states in every year.
d/ Includes North Dakota and South Dakota.
e/ Includes Oklahoma.
f/ Includes North Carolina.
g/ Included with Georgia.
h/ Included with Arkansas.

Prepared by Bituminous Coal Unit
Division of Service, W.P.A.
Under Direction of F. G. Sergeant

653

9837

P. Ex. 68-A

Trend of Bituminous Coal Production, By States,
1913 and 1930
(Net tons)

	1913	1930	% of increase or decrease	% 1930 is of 1913
Alabama	17,678,522	15,570,058	- 11.9%	88.1%
Arkansas	2,234,107	1,533,434	- 31.4	68.6
Colorado	9,232,510	8,196,910	- 11.2	88.8
Georgia	255,626	7,092	- 97.2	2.8
Illinois	61,618,744	53,731,230	- 12.8	87.2
Indiana	17,165,671	16,489,962	- 3.9	96.1
Iowa	7,525,936	3,892,571	- 48.3	51.7
Kansas	7,202,210	2,429,929	- 66.3	33.7
Kentucky	19,616,600	51,208,995	+161.0	261.0
Maryland	4,779,839	2,270,593	- 52.5	47.5
Michigan	1,231,786	661,113	- 46.3	53.7
Missouri	4,318,125	3,853,150	- 10.8	89.2
Montana	3,240,973	3,022,004	- 6.8	93.2
New Mexico	3,708,806	1,969,433	- 46.9	53.1
North Dakota	495,320	1,700,157	+243.2	343.2
Ohio	36,200,527	22,551,978	- 37.7	62.3
Oklahoma	4,165,770	2,793,954	- 32.9	67.1
Pennsylvania	173,781,217	124,462,787	- 28.4	71.6
South Dakota	10,540	12,810	+ 21.5	121.5
Tennessee	6,860,184	5,130,428	- 25.2	74.8
Texas	2,429,144	833,872	- 65.7	34.3
Utah	3,254,828	4,237,541	+ 30.8	130.8
Virginia	8,828,068	10,907,377	+ 23.6	123.6
Washington	3,877,891	2,301,928	- 40.6	59.4
West Virginia	71,254,136	121,472,638	+ 70.5	170.5
Wyoming	7,393,066	6,088,133	- 17.7	82.3
Other States	75,151	176,222	+134.5	234.5
Total U.S. Production	478,435,297	467,526,299	- 2.3	97.7

Source: Bureau of Mines reports.

NOTE: These years were selected for comparison because total U.S. production was approximately the same in both years.

Source: Page 626, Table 10 of "Coal in 1930" except "% 1930 is of 1913" which was calculated by adding, or subtracting % of increase or decrease from 100%

P. Ex. 68-A

Trend of Bituminous Coal Production, By States,
1913 and 1930
(Net tons)

	1913	1930	% of increase or decrease	% 1930 is of 1913
Alabama	17,678,522	15,570,058	- 11.9%	88.1%
Arkansas	2,234,107	1,533,434	- 31.4	68.6
Colorado	9,232,510	8,196,910	- 11.2	88.8
Georgia	255,626	7,092	- 97.2	2.8
Illinois	61,618,744	53,731,230	- 12.8	87.2
Indiana	17,165,671	16,489,962	- 3.9	96.1
Iowa	7,525,936	3,892,571	- 48.3	51.7
Kansas	7,202,210	2,429,929	- 66.3	33.7
Kentucky	19,616,600	51,208,995	+161.0	261.0
Maryland	4,779,839	2,270,593	- 52.5	47.5
Michigan	1,231,786	661,113	- 46.3	53.7
Missouri	4,318,125	3,853,150	- 10.8	89.2
Montana	3,240,973	3,022,004	- 6.8	93.2
New Mexico	3,708,806	1,969,433	- 46.9	53.1
North Dakota	495,320	1,700,157	+243.2	343.2
Ohio	36,200,527	22,551,978	- 37.7	62.3
Oklahoma	4,165,770	2,793,954	- 32.9	67.1
Pennsylvania	173,781,217	124,462,787	- 28.4	71.6
South Dakota	10,540	12,810	+ 21.5	121.5
Tennessee	6,860,184	5,130,428	- 25.2	74.8
Texas	2,429,144	833,872	- 65.7	34.3
Utah	3,254,828	4,257,541	+ 30.8	130.8
Virginia	8,828,068	10,907,377	+ 23.6	123.6
Washington	3,877,891	2,301,928	- 40.6	59.4
West Virginia	71,254,136	121,472,638	+ 70.5	170.5
Wyoming	7,393,066	6,038,133	- 17.7	82.3
Other States	75,151	176,322	+134.5	234.5
Total U.S. Production	478,435,297	467,526,299	- 2.3	97.7

Source: Bureau of Mines reports.

NOTE: These years were selected for comparison because total U.S. production was approximately the same in both years.

Source: Page 626, Table 10 of "Coal in 1930" except "% 1930 is of 1913" which was calculated by adding, or subtracting % of increase or decrease from 100%

P. Ex. 68-A

Trend of Bituminous Coal Production, By States,
1913 and 1930
(Net tons)

	1913	1930	% of increase or decrease	% 1930 is of 1913
Alabama	17,678,522	15,570,058	- 11.9%	88.1%
Arkansas	2,234,107	1,533,434	- 31.4	68.6
Colorado	9,232,510	8,196,910	- 11.2	88.8
Georgia	255,626	7,092	- 97.2	2.8
Illinois	61,618,744	53,731,230	- 12.8	87.2
Indiana	17,165,671	16,489,962	- 3.9	96.1
Iowa	7,525,936	3,892,571	- 48.3	51.7
Kansas	7,202,210	2,429,929	- 66.3	33.7
Kentucky	19,616,600	51,208,995	+161.0	261.0
Maryland	4,779,839	2,270,593	- 52.5	47.5
Michigan	1,231,786	661,113	- 46.3	53.7
Missouri	4,318,125	3,853,150	- 10.8	89.2
Montana	3,240,973	3,022,004	- 6.8	93.2
New Mexico	3,708,806	1,969,433	- 46.9	53.1
North Dakota	495,320	1,700,157	+243.2	343.2
Ohio	36,200,527	22,551,978	- 37.7	62.3
Oklahoma	4,165,770	2,793,954	- 32.9	67.1
Pennsylvania	173,781,217	124,462,787	- 28.4	71.6
South Dakota	10,540	12,810	+ 21.5	121.5
Tennessee	6,860,184	5,130,428	- 25.2	74.8
Texas	2,429,142	833,872	- 65.7	34.3
Utah	3,254,828	4,257,541	+ 30.8	130.8
Virginia	8,828,068	10,907,377	+ 23.6	123.6
Washington	3,877,891	2,301,928	- 40.6	59.4
West Virginia	71,254,136	121,472,638	+ 70.5	170.5
Wyoming	7,393,066	6,088,133	- 17.7	82.3
Other States	75,151	176,222	+134.5	234.5
Total U.S. Production	478,435,297	467,526,299	- 2.3	97.7

Source: Bureau of Mines reports.

NOTE: These years were selected for comparison because total U.S. production was approximately the same in both years.

Source: Page 626, Table 10 of "Coal in 1930" except "% 1930 is of 1913" which was calculated by adding, or subtracting % of increase or decrease from 100%

9837

Trend of Bituminous Coal Production, By States,
1913 and 1930
(Net tons)

	1913	1930	% of increase or decrease	% 1930 is of 1913
Alabama	17,678,522	15,570,058	- 11.9%	88.1%
Arkansas	2,234,107	1,533,434	- 31.4	68.6
Colorado	9,232,510	8,196,910	- 11.2	88.8
Georgia	255,626	7,092	- 97.2	2.8
Illinois	61,618,744	53,731,230	- 12.8	87.2
Indiana	17,165,671	16,489,962	- 3.9	96.1
Iowa	7,525,936	3,892,571	- 48.3	51.7
Kansas	7,202,210	2,429,929	- 66.3	33.7
Kentucky	19,616,600	51,208,995	+161.0	261.0
Maryland	4,779,839	2,270,593	- 52.5	47.5
Michigan	1,231,786	661,113	- 46.3	53.7
Missouri	4,318,125	3,853,150	- 10.8	89.2
Montana	3,240,973	3,022,004	- 6.8	93.2
New Mexico	3,708,806	1,969,433	- 46.9	53.1
North Dakota	495,520	1,700,157	+243.2	343.2
Ohio	36,200,527	22,551,978	- 37.7	62.3
Oklahoma	4,165,770	2,793,954	- 32.9	67.1
Pennsylvania	173,781,217	124,462,787	- 28.4	71.6
South Dakota	10,540	12,810	+ 21.5	121.5
Tennessee	6,860,184	5,130,428	- 25.2	74.8
Texas	2,429,144	833,872	- 65.7	34.3
Utah	3,254,828	4,257,341	+ 30.8	130.8
Virginia	8,828,068	10,907,377	+ 23.6	123.6
Washington	3,877,891	2,301,928	- 40.6	59.4
West Virginia	71,254,136	121,472,638	+ 70.5	170.5
Wyoming	7,393,066	6,088,133	- 17.7	82.3
Other States	75,151	176,222	+134.5	234.5
Total U.S. Production	478,435,297	467,526,299	- 2.3	97.7

Source: Bureau of Mines reports.

NOTE: These years were selected for comparison because total U.S. production was approximately the same in both years.

Source: Page 626, Table 10 of "Coal in 1930" except "% 1930 is of 1913" which was calculated by adding, or subtracting % of increase or decrease from 100%

9837

P. Ex. 68-A

Trend of Bituminous Coal Production, By States,
1913 and 1930
(Net tons)

	1913	1930	% of increase or decrease	% 1930 is of 1913
Alabama	17,678,522	15,570,058	- 11.9%	88.1%
Arkansas	2,234,107	1,533,434	- 31.4	68.6
Colorado	9,232,510	8,196,910	- 11.2	88.8
Georgia	255,626	7,092	- 97.2	2.8
Illinois	61,618,744	53,731,230	- 12.8	87.2
Indiana	17,165,671	16,489,962	- 3.9	96.1
Iowa	7,525,936	3,892,571	- 48.3	51.7
Kansas	7,202,210	2,429,929	- 66.3	33.7
Kentucky	19,616,600	51,208,995	+161.0	261.0
Maryland	4,779,839	2,270,593	- 52.5	47.5
Michigan	1,231,786	661,113	- 46.3	53.7
Missouri	4,318,125	3,853,150	- 10.8	89.2
Montana	3,240,973	3,022,004	- 6.8	93.2
New Mexico	3,708,806	1,969,433	- 46.9	53.1
North Dakota	495,320	1,700,157	+243.2	343.2
Ohio	36,200,527	22,551,978	- 37.7	62.3
Oklahoma	4,165,770	2,793,954	- 32.9	67.1
Pennsylvania	173,781,217	124,462,787	- 28.4	71.6
South Dakota	10,540	12,810	+ 21.5	121.5
Tennessee	6,860,184	5,130,428	- 25.2	74.8
Texas	2,429,142	833,872	- 65.7	34.3
Utah	3,254,828	4,257,541	+ 30.8	130.8
Virginia	8,828,068	10,907,377	+ 23.6	123.6
Washington	3,877,891	2,301,928	- 40.6	59.4
West Virginia	71,254,136	121,472,638	+ 70.5	170.5
Wyoming	7,393,066	6,088,133	- 17.7	82.3
Other States	75,151	176,222	+134.5	234.5
Total U.S. Production	478,435,297	467,526,299	- 2.3	97.7

Source: Bureau of Mines reports.

NOTE: These years were selected for comparison because total U.S. production was approximately the same in both years.

Source: Page 626, Table 10 of "Coal in 1930" except "% 1930 is of 1913" which was calculated by adding, or subtracting % of increase or decrease from 100%

BITUMINOUS COAL SHIPPED TO NEW ENGLAND BY RAIL AND BY NORTHERN AND SOUTHERN TIDEWATER PORTS, 1919 - 1934, IN NET TONS
(Compiled from published reports of the U.S.Bureau of Mines)

Year	All-rail receipts in NEW ENGLAND: a	Tidewater shipments to NEW ENGLAND b			GRAND TOTAL
		From New York Philadelphia and Baltimore:	From Hampton Roads and Charleston:	Total Tidewater	
Net Tons:					
1919	9,655,000	3,132,213	5,253,169	8,385,382	18,040,382
1920	12,223,000	4,308,085	6,148,359	10,456,444	22,679,444
1921	8,374,000	2,840,707	6,017,924	8,858,631	17,232,631
1922	5,812,000	1,715,623	9,176,835	10,892,458	16,704,458
1923	9,634,000	3,702,907	9,671,413	13,374,320	23,008,320
1924	6,985,000	2,108,325	9,379,905	11,488,230	18,473,230
1925	7,756,000	2,257,249	11,206,213	13,463,462	21,219,462
1926	8,045,000	2,443,082	10,505,856	12,948,938	20,993,938
1927	7,232,000	2,239,410	12,589,571	14,828,981	22,060,981
1928	6,473,000	1,645,656	11,798,964	13,444,620	19,917,620
1929	6,781,000	1,569,976	12,874,909	14,444,885	21,225,885
1930	6,149,000	1,646,628	12,379,796	14,026,424	20,175,424
1931	5,611,000	1,098,673	11,547,464	12,646,137	18,257,137
1932	4,544,000	703,976	9,913,663	10,617,639	15,161,639
1933	4,787,000	791,171	10,559,355	11,350,526	16,137,526
1934	5,422,000	1,088,718	10,662,416	11,751,134	17,173,134
Per Cent of Total					
1919	53.5	17.4	29.1	46.5	100.0
1920	53.9	19.0	27.1	46.1	100.0
1921	48.6	16.5	34.9	51.4	100.0
1922	34.8	10.3	54.9	65.2	100.0
1923	41.9	16.1	42.0	58.1	100.0
1924	37.8	11.4	50.8	62.2	100.0
1925	36.6	10.6	52.8	63.4	100.0
1926	38.3	11.6	50.1	61.7	100.0
1927	32.8	10.2	57.0	67.2	100.0
1928	32.5	8.3	59.2	67.5	100.0
1929	31.9	7.4	60.7	68.1	100.0
1930	30.5	8.2	61.3	69.5	100.0
1931	30.7	6.0	63.3	69.3	100.0
1932	30.0	4.6	65.4	70.0	100.0
1933	29.7	4.9	65.4	70.3	100.0
1934	31.6	6.3	62.1	68.4	100.0

a From records of the Commonwealth of Massachusetts, Division on the Necessaries of Life.

b Cargo coal dumped into vessels consigned to New England as reported by the railroads operating tidewater piers.

By F. G. Tryon and W.H. Young
Coal Economics Division
United States Bureau of Mines.

November 4, 1935.

BITUMINOUS COAL SHIPPED TO NEW ENGLAND BY RAIL AND BY NORTHERN AND SOUTHERN TIDEWATER PORTS, 1919 - 1934, IN NET TONS
(Compiled from published reports of the U.S.Bureau of Mines)

Year	All-rail receipts in NEW ENGLAND: a	Tidewater shipments to NEW ENGLAND b			GRAND TOTAL
		From New York Philadelphia and Baltimore:	From Hampton Roads and Charleston:	Total Tidewater	
Net Tons:					
1919	9,655,000	3,132,213	5,253,169	8,385,382	18,040,382
1920	12,223,000	4,308,085	6,148,359	10,456,444	22,679,444
1921	8,374,000	2,840,707	6,017,924	8,858,631	17,232,631
1922	5,812,000	1,715,623	9,176,835	10,892,458	16,704,458
1923	9,634,000	3,702,907	9,671,413	13,374,320	23,008,320
1924	6,985,000	2,108,325	9,379,905	11,488,230	18,473,230
1925	7,756,000	2,257,249	11,206,213	13,463,462	21,219,462
1926	8,045,000	2,443,082	10,505,856	12,948,938	20,993,938
1927	7,232,000	2,239,410	12,589,571	14,828,981	22,060,981
1928	6,473,000	1,645,656	11,798,964	13,444,620	19,917,620
1929	6,781,000	1,569,976	12,874,909	14,444,885	21,225,885
1930	6,149,000	1,646,628	12,379,796	14,026,424	20,175,424
1931	5,611,000	1,098,673	11,547,464	12,646,137	18,257,137
1932	4,544,000	703,976	9,913,663	10,617,639	15,161,639
1933	4,787,000	791,171	10,559,355	11,350,526	16,137,526
1934	5,422,000	1,088,718	10,662,416	11,751,134	17,173,134
Per Cent of Total					
1919	53.5	17.4	29.1	46.5	100.0
1920	53.9	19.0	27.1	46.1	100.0
1921	48.6	16.5	34.9	51.4	100.0
1922	34.8	10.3	54.9	65.2	100.0
1923	41.9	16.1	42.0	58.1	100.0
1924	37.8	11.4	50.8	62.2	100.0
1925	36.6	10.6	52.8	63.4	100.0
1926	38.3	11.6	50.1	61.7	100.0
1927	32.8	10.2	57.0	67.2	100.0
1928	32.5	8.3	59.2	67.5	100.0
1929	31.9	7.4	60.7	68.1	100.0
1930	30.5	8.2	61.3	69.5	100.0
1931	30.7	6.0	63.3	69.3	100.0
1932	30.0	4.6	65.4	70.0	100.0
1933	29.7	4.9	65.4	70.3	100.0
1934	31.6	6.3	62.1	68.4	100.0

a From records of the Commonwealth of Massachusetts, Division on the Necessaries of Life.

b Cargo coal dumped into vessels consigned to New England as reported by the railroads operating tidewater piers.

By F. G. Tryon and W.H. Young
Coal Economics Division
United States Bureau of Mines.

November 4, 1935.

D. Ex. 29-C

BITUMINOUS COAL SHIPPED TO NEW ENGLAND BY RAIL AND BY NORTHERN AND SOUTHERN TIDEWATER PORTS, 1919 - 1934, IN NET TONS
(Compiled from published reports of the U.S.Bureau of Mines)

Year	All-rail receipts in NEW ENGLAND: a	Tidewater shipments to NEW ENGLAND b			GRAND TOTAL
		From New York Philadelphia and Baltimore:	From Hampton Roads and Charlestor:	Total Tidewater	
Net Tons:					
1919	9,655,000	3,132,213	5,253,169	8,385,382	18,040,382
1920	12,223,000	4,308,085	6,148,359	10,456,444	22,679,444
1921	8,374,000	2,840,707	6,017,924	8,858,631	17,232,631
1922	5,812,000	1,715,623	9,176,835	10,892,458	16,704,458
1923	9,634,000	3,702,907	9,671,413	13,374,320	23,008,320
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1925	7,756,000	2,257,249	11,206,213	13,463,462	21,219,462
1926	8,045,000	2,443,082	10,505,856	12,948,938	20,993,938
1927	7,232,000	2,239,410	12,589,571	14,828,981	22,060,981
1928	6,473,000	1,645,656	11,798,964	13,444,620	19,917,620
1929	6,781,000	1,569,976	12,874,909	14,444,885	21,225,885
1930	6,149,000	1,646,628	12,379,796	14,026,424	20,175,424
1931	5,611,000	1,098,673	11,547,464	12,646,137	18,257,137
1932	4,544,000	703,976	9,913,663	10,617,639	15,161,639
1933	4,787,000	791,171	10,559,355	11,350,526	16,137,526
1934	5,422,000	1,088,718	10,662,416	11,751,134	17,173,134
Per Cent of Total					
1919	53.5	17.4	29.1	46.5	100.0
1920	53.9	19.0	27.1	46.1	100.0
1921	48.6	16.5	34.9	51.4	100.0
1922	34.8	10.3	54.9	65.2	100.0
1923	41.9	16.1	42.0	58.1	100.0
1924	37.8	11.4	50.8	62.2	100.0
1925	36.6	10.6	52.8	63.4	100.0
1926	38.3	11.6	50.1	61.7	100.0
1927	32.8	10.2	57.0	67.2	100.0
1928	32.5	8.3	59.2	67.5	100.0
1929	31.9	7.4	60.7	68.1	100.0
1930	30.5	8.2	61.3	69.5	100.0
1931	30.7	6.0	63.3	69.3	100.0
1932	30.0	4.6	65.4	70.0	100.0
1933	29.7	4.9	65.4	70.3	100.0
1934	31.6	6.3	62.1	68.4	100.0

a From records of the Commonwealth of Massachusetts, Division on the Necessaries of Life.

b Cargo coal dumped into vessels consigned to New England as reported by the railroads operating tidewater piers.

By F. G. Tryon and W.H. Young
Coal Economics Division
United States Bureau of Mines.

November 4, 1935.

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BITUMINOUS COAL SHIPPED TO NEW ENGLAND BY RAIL AND BY NORTHERN AND SOUTHERN TIDEWATER PORTS, 1919 - 1934, IN NET TONS
(Compiled from published reports of the U. S. Bureau of Mines)

Year	All-rail receipts in NEW ENGLAND [a]	Tidewater shipments to NEW ENGLAND [b]: From New York Philadelphia and Baltimore	From Hampton Roads and Charleston	Total Tidewater	GRAND TOTAL
Net Tons:					
1919	9,655,000	3,132,213	5,253,169	8,385,382	18,040,382
1920	12,223,000	4,308,085	6,148,359	10,456,444	22,679,444
1921	8,374,000	2,840,707	6,017,924	8,858,631	17,232,631
1922	3,812,000	1,715,823	9,176,835	10,892,458	16,704,458
1923	9,634,000	3,702,907	9,671,413	13,374,320	23,008,320
1924	6,985,000	2,108,325	9,379,903	11,488,230	18,473,230
1925	7,756,000	2,257,249	11,208,213	13,463,462	21,219,462
1926	8,045,000	2,443,082	10,505,856	12,948,938	20,993,938
1927	7,232,000	2,239,410	12,589,571	14,828,931	22,060,981
1928	6,473,000	1,645,656	11,798,964	13,444,620	19,917,620
1929	6,781,000	1,569,976	12,874,909	14,444,885	21,225,885
1930	6,149,000	1,646,623	12,379,796	14,026,424	20,175,424
1931	5,611,000	1,098,673	11,547,464	12,645,137	18,257,137
1932	4,544,000	703,976	9,913,663	10,617,639	15,161,639
1933	4,787,000	791,171	10,559,355	11,350,526	16,137,526
1934	5,422,000	1,088,718	10,662,416	11,751,134	17,173,134
Percent of total					
1919	53.5	17.4	29.1	46.5	100.0
1920	53.9	19.0	27.1	46.1	100.0
1921	48.6	16.5	34.9	51.4	100.0
1922	34.8	10.3	54.9	65.2	100.0
1923	41.9	16.1	42.0	58.1	100.0
1924	37.8	11.4	50.8	62.2	100.0
1925	36.6	10.6	52.8	63.4	100.0
1926	38.3	11.6	50.1	61.7	100.0
1927	32.8	10.2	57.0	67.2	100.0
1928	32.5	8.3	59.2	67.5	100.0
1929	31.9	7.4	60.7	68.1	100.0
1930	30.5	8.2	61.3	69.5	100.0
1931	30.7	6.0	63.3	69.3	100.0
1932	30.0	4.6	63.4	70.0	100.0
1933	29.7	4.9	65.4	70.3	100.0
1934	31.6	6.3	62.1	68.4	100.0

[a] From records of the Commonwealth of Massachusetts, Division on the Necessaries of Life.

[b] Cargo coal dumped into vessels consigned to New England as reported by the rail roads operating tidewater piers.

By F. G. Tryon and W. H. Young,
Coal Economics Division,
United States Bureau of Mines.

November 4, 1935.

BITUMINOUS COAL SHIPPED TO NEW ENGLAND BY RAIL AND BY NORTHERN AND SOUTHERN TIDEWATER PORTS, 1919 - 1934, IN NET TONS

(Compiled from published reports of the U. S. Bureau of Mines)

Year	All-rail receipts in NEW ENGLAND a	Tidewater shipments to NEW ENGLAND b			GRAND TOTAL
		From New York Philadelphia and Baltimore	From Hampton Roads and Charleston	Total Tidewater	
Net tons:					
1919	9,655,000	3,132,213	5,253,169	8,385,382	18,040,382
1920	12,223,000	4,308,085	6,148,359	10,456,444	22,679,444
1921	8,374,000	2,840,707	6,017,924	8,858,631	17,232,631
1922	5,812,000	1,715,623	9,176,835	10,892,458	16,704,458
1923	9,634,000	3,702,907	9,671,413	13,374,320	23,008,320
1924	6,985,000	2,108,325	9,379,905	11,488,230	18,473,230
1925	7,756,000	2,257,249	11,206,213	13,463,462	21,219,462
1926	8,045,000	2,443,082	10,505,856	12,948,938	20,993,938
1927	7,232,000	2,239,410	12,589,571	14,828,981	22,060,981
1928	6,473,000	1,645,656	11,798,964	13,444,620	19,917,620
1929	6,781,000	1,569,976	12,874,909	14,444,885	21,225,885
1930	6,149,000	1,646,628	12,379,796	14,026,424	20,175,424
1931	5,611,000	1,098,673	11,347,464	12,646,137	18,257,137
1932	4,544,000	703,976	9,913,663	10,617,639	15,161,639
1933	4,787,000	791,171	10,559,355	11,350,526	16,137,526
1934	5,422,000	1,088,718	10,662,416	11,751,134	17,173,134
Percent of total					
1919	53.5	17.4	29.1	46.5	100.0
1920	53.9	19.0	27.1	46.1	100.0
1921	48.6	16.5	34.9	51.4	100.0
1922	34.8	10.3	54.9	65.2	100.0
1923	41.9	16.1	42.0	58.1	100.0
1924	37.8	11.4	50.8	62.2	100.0
1925	36.6	10.6	52.8	63.4	100.0
1926	38.3	11.6	50.1	61.7	100.0
1927	32.8	10.2	57.0	67.2	100.0
1928	32.5	8.3	59.2	67.5	100.0
1929	31.9	7.4	60.7	68.1	100.0
1930	30.5	8.2	61.3	69.5	100.0
1931	30.7	6.0	63.3	69.3	100.0
1932	30.0	4.6	65.4	70.0	100.0
1933	29.7	4.9	65.4	70.3	100.0
1934	31.6	6.3	62.1	68.4	100.0

a From records of the Commonwealth of Massachusetts, Division on the Necessaries of Life.

b Cargo coal dumped into vessels consigned to New England as reported by the railroads operating tidewater piers.

By F. G. Tryon and W. H. Young,
Coal Economics Division,
United States Bureau of Mines.

November 4, 1935.

No. N.C.R. 871

PRODUCTION OF BITUMINOUS COAL, 1920 TO 1933, IN THOUSANDS OF NET TONS

(Prepared from operators' reports to the United States Bureau of Mines - Exclusive of mines producing less than 1,000 tons annually)

Code Authority Districts	1920		1921		1922		1923		1924		1925		1926	
	Thousands of net tons	Percentage of total	Thousands of net tons	Percentage of total	Thousands of net tons	Percentage of total	Thousands of net tons	Percentage of total	Thousands of net tons	Percentage of total	Thousands of net tons	Percentage of total	Thousands of net tons	Percentage of total
DIVISION NO. I														
Eastern Sub-Division:														
Central Pennsylvania 1/	60,584	10.74	42,073	10.12	38,479	9.19	56,349	10.00	43,244	8.94	45,376	8.72	49,671	8.70
Somerset 2/	7,433	1.32	5,640	1.40	6,117	1.46	5,712	1.01	5,647	1.17	6,753	1.30	7,142	1.25
Maryland-Upper Potomac 3/	6,243	1.11	2,993	.72	2,315	.55	3,775	.67	3,139	.65	4,155	.80	4,622	.80
Total, Eastern Sub-Division	74,260	13.17	50,706	12.24	46,911	11.20	65,836	11.68	52,030	10.76	56,284	10.82	61,434	10.75
Western Pennsylvania Sub-Division 4/	100,041	17.74	68,142	16.38	67,106	16.02	109,580	19.45	81,743	16.90	84,799	16.31	96,028	16.75
Ohio Sub-Division:														
Ohio - all	45,876	8.03	31,943	7.68	26,645	6.36	40,444	7.18	30,473	6.30	28,034	5.39	27,672	4.86
Panhandle of West Virginia 5/	4,341	.77	4,078	.98	4,464	1.07	6,208	1.10	5,406	1.18	5,898	1.13	6,305	1.10
Michigan - all	1,489	.26	1,142	.27	989	.22	1,178	.21	833	.17	898	.16	847	.18
Total, Ohio Sub-Division	51,706	9.06	37,157	8.93	32,098	7.65	47,830	8.49	36,710	7.59	34,834	6.68	34,824	6.08
Northern West Virginia 6/	21,839	4.06	16,823	3.90	16,594	3.96	31,028	5.51	22,823	4.99	26,668	5.13	34,582	6.08
Southern Low Volatile 7/	33,778	5.99	29,134	7.00	35,098	8.38	37,380	6.64	29,628	6.19	46,864	9.02	53,579	9.34
Southern High Volatile 8/	66,625	11.82	55,997	13.46	64,939	15.50	81,588	14.48	63,905	17.35	101,470	19.51	113,710	19.83
Western Kentucky 9/	11,037	1.96	8,618	2.07	13,734	3.28	10,890	1.93	9,080	1.88	12,187	2.34	15,464	2.70
GRAND TOTAL - DIVISION NO. I	359,862	63.82	266,177	63.98	276,480	65.99	364,124	64.68	325,253	67.24	363,026	69.81	409,802	71.47
DIVISION NO. II														
Illinois Sub-Division	88,631	15.72	69,603	16.74	58,378	13.94	79,258	14.07	68,323	14.13	66,909	12.86	69,367	12.10
Indiana Sub-Division	29,091	5.16	20,319	4.88	18,950	4.52	26,136	4.64	21,480	4.44	21,225	4.08	23,186	4.04
Iowa Sub-Division:														
Negro and Appanoose Counties	1,539	.27	631	.15	895	.21	952	.17	841	.17	574	.11	499	.09
Rest of State	6,236	1.11	3,900	.94	3,401	.82	4,750	.84	4,628	.96	4,141	.80	4,126	.72
Total, Iowa Sub-Division	7,775	1.38	4,531	1.09	4,296	1.03	5,702	1.01	5,469	1.13	4,715	.91	4,625	.81
GRAND TOTAL - DIVISION NO. II	125,497	22.26	94,453	22.71	81,624	19.49	111,096	19.72	95,272	19.70	92,849	17.85	97,178	16.95
DIVISION NO. III														
Alabama - all	16,140	2.86	12,569	3.00	18,229	4.35	20,420	3.62	19,130	3.95	20,005	3.85	21,001	3.66
Georgia - all	50	.01	34	.01	61	.01	76	.01	75	.02	66	.01	60	.01
Southern Tennessee 10/	1,288	.22	1,076	.28	1,331	.32	1,726	.31	936	.19	1,207	.23	1,291	.23
GRAND TOTAL - DIVISION NO. III	17,478	3.09	13,679	3.29	19,621	4.68	22,222	3.94	20,141	4.16	21,278	4.09	22,352	3.90
DIVISION NO. IV														
Southwestern Coals Sub-Division:														
Kansas - all	5,838	1.04	3,466	.83	2,776	.66	4,328	.77	4,248	.88	4,524	.87	4,416	.77
Missouri - all	5,267	.93	3,551	.86	2,849	.68	3,514	.59	2,481	.51	2,694	.52	3,009	.52
Oklahoma - High Volatile 11/	4,359	.77	3,006	.72	2,431	.58	2,995	.44	2,093	.43	1,946	.37	2,329	.41
Total, Southwestern Coals Sub-Div.	15,464	2.74	10,023	2.41	8,056	1.92	10,837	1.80	8,822	1.82	9,164	1.76	9,754	1.70
Ark.-Okla. Smokeless Sub-Division:														
Arkansas - all	2,051	.36	1,227	.29	1,086	.26	1,233	.22	1,452	.30	1,220	.24	1,459	.25
Oklahoma - Low Volatile 12/	471	.08	356	.09	352	.08	346	.06	236	.05	380	.07	514	.09
Total, Ark.-Okla. Smokeless Sub-Div.	2,522	.44	1,583	.38	1,438	.34	1,579	.28	1,688	.35	1,600	.31	1,973	.34
Texas - all	1,615	.29	972	.23	1,106	.27	1,187	.21	1,147	.24	1,009	.19	1,091	.19
GRAND TOTAL - DIVISION NO. IV	19,601	3.48	12,578	3.02	10,600	2.53	12,903	2.29	11,657	2.41	11,773	2.26	12,818	2.23
DIVISION NO. V														
Southern Col. and Northern N. Mex. 13/	12,080	2.14	8,496	2.05	9,341	2.23	9,348	1.66	9,199	1.90	9,111	1.75	9,437	1.65
Central and Southern New Mexico 14/	1,127	.20	739	.18	933	.22	1,103	.20	1,141	.24	1,049	.20	1,069	.19
Northern Colorado 15/	2,753	.49	2,349	.56	2,836	.68	2,775	.49	2,890	.60	2,707	.52	2,940	.51
Utah - all	4,003	1.06	4,079	.98	4,991	1.19	4,720	.84	4,448	.93	4,690	.90	4,374	.76
Wyoming:														
Southern 16/	5,861	1.04	4,879	1.17	4,040	.96	5,235	.93	4,640	.96	4,573	.88	4,438	.78
Northern 17/	1,762	.67	2,322	.56	1,918	.46	2,324	.41	2,117	.44	1,980	.38	2,074	.36
Total, Wyoming	9,623	1.71	7,201	1.73	5,958	1.42	7,559	1.34	6,757	1.40	6,553	1.26	6,512	1.14
Montana - all	4,404	.78	2,734	.66	2,557	.61	3,144	.56	2,905	.60	3,044	.59	2,798	.49
Washington - all	3,753	.67	2,489	.58	2,577	.62	2,986	.52	2,654	.55	2,538	.49	2,587	.45
North Dakota and South Dakota:														
North Dakota - all	908	.16	865	.21	1,268	.30	1,357	.24	1,201	.25	1,325	.26	1,370	.24
South Dakota - all	13	.00	8	.00	8	.00	10	.00	12	.00	14	.00	15	.00
Total, No. Dakota and So. Dakota	921	.16	873	.21	1,276	.30	1,367	.24	1,213	.25	1,339	.26	1,385	.24
All Other Western States 18/	154	.03	136	.03	75	.02	80	.00	17	.00	13	.00	19	.00
GRAND TOTAL - DIVISION NO. V	40,818	7.24	29,036	6.98	30,544	7.29	32,963	5.85	31,264	6.47	31,044	5.97	31,130	5.43
Alaska - all	61	.01	77	.02	79	.02	120	.02	100	.02	83	.02	87	.02
UNITED STATES	563,517	100.00	416,000	100.00	418,888	100.00	563,423	100.00	483,687	100.00	520,053	100.00	573,367	100.00

1/Includes U. S. Coal Commission Fields No. 6 Blossburg; 7 Broad Top; 9 abc Central Pennsylvania.
2/Includes U. S. Coal Commission Field No. 8 Somerset.
3/Includes U. S. Coal Commission Field No. 10 Maryland-Potomac (or Maryland plus Grant, Mineral, and Tucker counties, West Virginia).
4/Includes U. S. Coal Commission Fields No. 1 Pittsburgh; 2 Connellsville; 3 Westmoreland-Ligonier; 4 ab Freeport; 5 Butler-Mercer.
5/Includes Brooks, Hancock, Marshall and Ohio counties in West Virginia.
6/Includes Monongalia, Preston, Marion, Harrison, Taylor, Lewis, Barbour, Gilmer, Upshur, Randolph, Braxton, and Webster counties, and Nicholas County on Baltimore and Ohio Railroad (or U. S. Coal Commission Fields No. 11 Fairmont and No. 24 abc, except Clay and Kanawha counties).
7/Includes U. S. Coal Commission Fields No. 17 Tug River; 18 Pocahontas; 19 Winding Gulf; 20 New River; 21 Virginia Anthracite; 28 Richmond Basin; 32 North Carolina.
8/Includes mines in Clay and Kanawha counties in U. S. Coal Commission Field No. 24 abc; 13 Mason County; 14 Putnam County; 15 Kenova; 16 Thacker; 21 Kanawha; 22 Coal River; 23 Logan; 25 Southwestern Virginia; 26 Clinch Valley; 36 Northeastern Kentucky; 37 Hazard; 38 Harlan; 39 Southern Appalachian; 40 Jellico; 43 Pentress; and northern part of No. 42, namely, mines in Anderson, Morgan, and Roane counties and Cumberland County except on the Nashville, Chattanooga and St. Louis Railroad. (This includes all high volatile districts of Southern West Virginia, Eastern Kentucky, Virginia, and Northern Tennessee).
9/Includes U. S. Coal Commission Field No. 41 Western Kentucky. E.B.
10/Includes Bledsoe, Grundy, Hamilton, Marion, Rhea, Sequatchie, Van Buren, Warren, White counties, and mines in Cumberland County on the Nashville, Chattanooga, and St.Louis
11/Includes all counties in Oklahoma except LeFlore, Haskell, and Sequoyah.
12/Includes LeFlore, Haskell, and Sequoyah counties.
13/Includes all counties in Colorado except those included in Northern Colorado. Also, Colfax County, New Mexico.
14/Includes all counties in New Mexico except Colfax.
15/Includes Adams, Arapahoe, Boulder, Douglas, Elbert, El Paso, Jackson, Jefferson, Larimer, and Weld counties.
16/Includes Lincoln, Sweetwater, and Uinta counties.
17/Includes all counties in Wyoming except those in Southern Wyoming.
18/Includes Arizona, California, Idaho, Nebraska, Nevada, and Oregon.

(Continued on next page)

So. W.C.R. 671

PRODUCTION OF BITUMINOUS COAL, 1920 TO 1933, IN THOUSANDS OF NET TONS (Continued)
(Prepared from operators' reports to the United States Bureau of Mines - Exclusive of mines producing less than 1,000 tons annually)

Code Authority Districts	1927		1928		1929		1930		1931		1932		1933 (Preliminary)	
	Thousands of net tons	Percentage of total	Thousands of net tons	Percentage of total	Thousands of net tons	Percentage of total	Thousands of net tons	Percentage of total	Thousands of net tons	Percentage of total	Thousands of net tons	Percentage of total	Thousands of net tons	Percentage of total
DIVISION NO. I														
Eastern Sub-Division:														
Central Pennsylvania 1/	43,345	8.37	40,577	8.10	43,886	8.20	39,409	8.43	34,092	8.92	28,051	9.05	28,347	8.66
Somerset 2/	7,157	1.38	6,651	1.33	6,340	1.19	5,950	1.27	5,406	1.42	3,547	1.15	5,736	1.75
Maryland-Upper Potomac 3/	4,329	.84	3,950	.79	4,073	.76	3,507	.75	2,953	.77	2,174	.70		
Total, Eastern Sub-Division	54,831	10.59	51,178	10.22	54,299	10.15	48,866	10.45	42,451	11.11	33,772	10.90	34,125	10.43
Western Pennsylvania Sub-Division 4/	82,462	15.93	83,975	16.77	93,291	17.44	79,104	16.92	58,161	15.22	43,178	13.94	46,981	14.33
Ohio Sub-Division:														
Ohio - all	15,800	3.05	15,641	3.13	23,689	4.43	22,552	4.83	20,411	5.34	13,910	4.49	23,227	7.08
Panhandle of West Virginia 5/	7,137	1.38	7,212	1.44	6,335	1.18	5,114	1.09	4,054	1.06	3,545	1.18		
Michigan - all	737	.15	617	.12	805	.15	661	.14	359	.10	446	.14	340	.11
Total, Ohio Sub-Division	23,674	4.58	23,470	4.69	30,829	5.76	28,327	5.06	24,824	6.50	18,001	5.81	23,567	7.19
Northern West Virginia 6/	35,723	6.90	30,892	6.17	30,210	5.65	25,752	5.51	20,619	5.45	16,772	5.42	18,298	5.58
Southern Low Volatile 7/	51,432	9.93	51,068	10.20	56,695	10.60	50,511	10.80	42,888	11.22	36,229	11.70	41,092	12.53
Southern High Volatile 8/	114,799	22.17	104,454	20.86	106,846	19.97	94,109	20.13	77,594	20.31	64,388	20.79	67,658	20.63
Western Kentucky 9/	21,805	4.10	16,277	3.25	14,437	2.70	10,915	2.34	8,579	2.25	9,540	3.08	7,270	2.21
GRAND TOTAL - DIVISION NO. I	384,143	74.20	361,114	72.16	386,607	72.27	337,584	72.21	275,116	72.06	221,580	71.64	238,991	72.88
DIVISION NO. II														
Illinois Sub-Division	46,848	9.05	55,948	11.17	60,658	11.34	53,731	11.49	44,303	11.59	33,474	10.81	36,110	11.01
Indiana Sub-Division	17,936	3.46	16,378	3.27	18,344	3.43	16,490	3.53	14,295	3.74	13,324	4.30	13,500	4.12
Iowa Sub-Division:														
Wayne and Appanoose Counties	338	.07	486	.10	585	.11	606	.13	564	.15	643	.21	3,230	.98
Rest of State	2,612	.50	1,198	.24	1,656	.68	1,287	.70	2,825	.74	3,219	1.04		
Total, Iowa Sub-Division	2,950	.57	1,684	.74	4,241	.79	3,893	.83	3,389	.89	3,862	1.25	3,230	.98
GRAND TOTAL - DIVISION NO. II	67,734	13.08	76,010	15.18	83,243	15.56	74,114	15.85	61,987	16.22	50,660	16.36	52,840	16.11
DIVISION NO. III														
Alabama - all	19,766	3.82	17,621	3.52	17,944	3.35	15,570	3.33	11,999	3.14	7,857	2.54	8,775	2.68
Georgia - all	77	.01	59	.01	45	.01	7	.00	21	.01	27	.01	869	.26
Southern Tennessee 10/	1,132	.83	1,219	.24	1,240	.23	1,111	.24	978	.25	821	.26		
GRAND TOTAL - DIVISION NO. III	21,035	4.06	18,899	3.77	19,229	3.58	16,688	3.57	12,998	3.40	8,705	2.81	9,644	2.94
DIVISION NO. IV														
Southwestern Coals Sub-Division:														
Kansas - all	3,444	.67	2,810	.56	2,976	.56	2,430	.52	1,987	.52	1,953	.63	5,390	1.64
Missouri - all	3,064	.59	3,732	.74	4,030	.75	3,653	.82	3,620	.95	4,070	1.31		
Oklahoma - High Volatile 11/	1,211	.22	2,784	.56	2,940	.55	2,195	.47	1,389	.36	644	.27		
Total, Southwestern Coals Sub-Div.	9,719	1.88	9,326	1.86	9,946	1.86	8,278	1.81	6,996	1.83	6,667	2.21		
Ark.-Okla. Smokeless Sub-Division:													Not possible to separate Oklahoma high and low volatile.	
Arkansas - all	1,549	.30	1,661	.33	1,695	.31	1,533	.33	1,154	.30	1,034	.34		
Oklahoma - Low Volatile 12/	607	.12	718	.14	834	.16	599	.13	519	.14	411	.13		
Total, Ark.-Okla. Smokeless Sub-Div.	2,156	.42	2,379	.47	2,529	.47	2,132	.46	1,673	.44	1,445	.47		
Texas - all	1,326	.25	1,182	.24	1,101	.21	834	.17	716	.18	636	.21	610	.19
GRAND TOTAL - DIVISION NO. IV	13,201	2.55	12,887	2.57	13,576	2.54	11,244	2.44	9,385	2.45	8,948	2.89	8,170	2.49
DIVISION NO. V														
Southern Col. and Northern N. Mex. 13/	9,133	1.77	8,615	1.72	8,179	1.53	6,350	1.36	4,645	1.22	3,677	1.18	6,371	1.94
Central and Southern New Mexico 14/	1,065	.21	1,049	.21	1,171	.22	977	.21	785	.21	637	.21		
Northern Colorado 15/	2,441	.47	2,896	.58	3,194	.60	2,839	.61	2,727	.71	2,546	.82		
Utah - all	4,782	.93	4,843	.97	5,161	.96	4,257	.91	3,350	.88	2,852	.92	2,610	.80
Wyoming:														
Southern 16/	4,525	.87	4,573	.91	4,727	.88	4,324	.92	3,567	.93	2,915	.94	3,985	1.21
Northern 17/	2,229	.43	1,999	.40	1,988	.37	1,764	.38	1,427	.37	1,256	.41		
Total, Wyoming	6,754	1.30	6,572	1.31	6,705	1.25	6,088	1.30	4,994	1.30	4,171	1.35	3,985	1.21
Montana - all	3,144	.60	3,324	.66	3,407	.64	3,022	.65	2,378	.62	2,125	.69	2,130	.65
Washington - all	2,635	.51	2,519	.50	2,521	.47	2,302	.49	1,846	.48	1,592	.51	1,460	.44
North Dakota and South Dakota:														
North Dakota - all	1,588	.89	1,650	.33	1,862	.35	1,700	.36	1,519	.40	1,740	.56	1,739	.53
South Dakota - all	12	.00	14	.00	13	.00	13	.00	28	.01	49	.02		
Total, No. Dakota and So. Dakota	1,600	.89	1,664	.33	1,875	.35	1,713	.36	1,547	.41	1,789	.58	1,739	.53
All Other Western States 18/	58	.01	87	.01	80	.00	28	.01	85	.01	83	.01	-	-
GRAND TOTAL - DIVISION NO. V	31,596	6.09	31,509	6.83	32,833	6.02	27,576	5.90	22,297	5.84	19,414	6.27	18,895	5.76
Alaska - all	104	.02	126	.03	101	.02	120	.03	106	.03	103	.03	-	-
UNITED STATES	517,763	100.00	500,745	100.00	534,989	100.00	467,586	100.00	382,089	100.00	309,710	100.00	327,940	100.00

1/Includes U. S. Coal Commission Fields No. 6 Blacksburg; 7 Broad Top; 9 abo Central Pennsylvania.
2/Includes U. S. Coal Commission Field No. 8 Somerset.
3/Includes U. S. Coal Commission Field No. 10 Maryland-Potomac (or Maryland plus Grant, Mineral, and Tucker counties, West Virginia).
4/Includes U. S. Coal Commission Fields No. 1 Pittsburgh; 2 Connellsville; 3 Westmoreland-Ligonier; 4 ab Freeport; 5 Butler-Mercer.
5/Includes Brooke, Hancock, Marshall and Ohio counties in West Virginia.
6/Includes Monongalia, Preston, Marion, Harrison, Taylor, Lewis, Barbour, Gilmer, Upshur, Randolph, Braxton, and Webster counties, and Nicholas County on Baltimore and Ohio Railroad (or U. S. Coal Commission Fields No. 11 Fairmont and No. 24 abo, except Clay and Kanawha counties).
7/Includes U. S. Coal Commission Fields No. 17 Pay River; 18 Pocahontas; 19 Winding Gulf; 20 New River; 27 Virginia Anthracite; 28 Richmond Basin; 29 North Carolina.
8/Includes mines in Clay and Kanawha counties in U. S. Coal Commission Field No. 24 abo; 13 Mason County; 14 Putnam County; 15 Kenova; 16 Thacker; 21 Kanawha; 22 Coal River; 23 Logan; 25 Southwestern Virginia; 26 Clinch Valley; 36 Northeastern Kentucky; 37 Hazard; 38 Harlan; 39 Southern Appalachian; 40 Jellico; 43 Pentress) and northern part of No. 42, namely, mines in Anderson, Morgan, and Roane counties and Cumberland County except on the Nashville, Chattanooga and St. Louis Railroad. (This includes all high volatile districts of Southern West Virginia, Eastern Kentucky, Virginia, and Northern Tennessee).
9/Includes U. S. Coal Commission Field No. 41 Western Kentucky.
10/Includes Bledsoe, Grundy, Hamilton, Marion, Rhea, Sequatchie, Van Buren, Warren, White counties, and mines in Cumberland County on the Nashville, Chattanooga and St.Louis R.R.
11/Includes all counties in Oklahoma except Leflore, Haskell, and Sequoyah.
12/Includes Leflore, Haskell, and Sequoyah counties.
13/Includes all counties in Colorado except those included in Northern Colorado. Also, Colfax County, New Mexico.
14/Includes all counties in New Mexico except Colfax.
15/Includes Adams, Arapahoe, Boulder, Douglas, Elbert, El Paso, Jackson, Jefferson, Larimer, and Weld counties.
16/Includes Lincoln, Sweetwater, and Uinta counties.
17/Includes all counties in Wyoming except those in Southern Wyoming.
18/Includes Arizona, California, Idaho, Nebraska, Nevada, and Oregon.

TABLE 8 PRODUCTION OF BITUMINOUS COAL, BY CODE AUTHORITY AREAS, 1925 TO 1934 – FINAL OFFICIAL BOUNDARIES (IN THOUSANDS OF NET TONS)

(At the request of the National Recovery Administration, the Bureau of Mines has prepared the following summary of coal production in 1925 to 1934, inclusive, arranged by Code Authority areas. The figures for 1934 are preliminary, as the final reports from the many thousands of mines operated in 1934 are still far from complete. The sources of the information used for each area are shown in full in Tables A and B, W C R 919 issued February 15, 1935. In some instances the Code Authority statisticians were able to supply figures for their areas, covering whole or part of the tonnage. In some other areas, preliminary tonnage returns have been obtained direct from the operators or from the State Mine inspectors. In still other areas and wherever complete information was not available, it was necessary to utilize the Bureau's estimates based upon railroad carloadings as developed in the Weekly Coal Report.

All figures for 1934 are subject to material revision

The figures for 1925 to 1933 are final, being based on complete returns from all operators known to have produced more than 1,000 tons a year.

Note that at the time the corresponding tables for 1920–1932 were published in W C R. 871, uncertainties prevailed regarding the exact boundaries of certain Code Authority sub-divisions, and it was necessary to use groupings of the fields established by the U. S Coal Commission, as described in detail on pages 2034–2052 of its report. (For the fields included under each area see footnotes in W. C. R. 871.) These Coal Commission groupings differed slightly from the boundaries finally established by the N R A in four cases

In preparing the present tables, these small discrepancies are eliminated, and the final official boundaries have been used as indicated by current tabulations of the Form X returns submitted by the Code Authorities.)

Code Authority Areas (Official boundaries finally agreed on)	1925 Thousands of net tons	1925 Percent of total	1926 Thousands of net tons	1926 Percent of total	1927 Thousands of net tons	1927 Percent of total	1928 Thousands of net tons	1928 Percent of total	1929 Thousands of net tons	1929 Percent of total
DIVISION NO. I										
Eastern Sub-Division:										
Central Pennsylvania	45,087	8.67	49,580	8.65	42,971	8.30	40,481	8.08	43,579	8.14
Somerset	6,753	1.30	7,142	1.25	7,157	1.38	6,651	1.33	6,340	1.19
Maryland-Upper Potomac	4,155	.80	4,622	.80	4,326	.84	3,950	.79	4,073	.76
Total Eastern Sub-Division	55,995	10.77	61,344	10.70	54,454	10.52	51,082	10.20	53,992	10.09
Western Pennsylvania Sub-Division	85,087	16.36	96,319	16.80	82,836	16.00	84,071	16.79	93,597	17.50
Ohio Sub-Division:										
Ohio – all	28,034	5.39	27,872	4.86	15,800	3.05	15,641	3.13	23,689	4.43
Panhandle of West Virginia	5,892	1.13	6,305	1.10	7,137	1.38	7,212	1.44	6,335	1.18
Michigan – all	808	.16	687	.12	757	.15	617	.12	805	.15
Total, Ohio Sub-Division	34,734	6.68	34,864	6.08	23,694	4.58	23,470	4.69	30,829	5.76
Northern West Virginia	26,668	5.13	34,522	6.02	35,723	6.90	30,898	6.17	30,210	5.65
Southern Low Volatile (No. 1)										
Bituminous coal 1/	47,734	9.18	54,555	9.51	52,313	10.10	51,976	10.38	57,768	10.80
Virginia semi-anthracite 2/	267	.05	264	.05	159	.03	172	.04	269	.05
Total, Southern No. 1	48,001	9.23	54,819	9.56	52,472	10.13	52,148	10.42	58,037	10.85
Southern High Volatile (No. 2) 1/	100,354	19.30	112,470	19.61	113,759	21.97	103,368	20.64	105,505	19.72
Western Kentucky	12,187	2.34	15,464	2.70	21,205	4.10	16,277	3.25	14,437	2.70
GRAND TOTAL – DIVISION NO. I	361,026	69.81	409,892	71.47	384,143	74.20	361,314	72.16	386,607	72.27
DIVISION NO. II										
Illinois Sub-Division	66,909	12.86	69,367	12.10	46,848	9.05	55,948	11.17	60,658	11.34
Indiana Sub-Division	21,225	4.08	23,186	4.04	17,936	3.46	16,378	3.27	18,344	3.43
Iowa Sub-Division:										
Wayne and Appanoose counties	574	.11	499	.09	338	.07	486	.10	585	.11
Rest of State	4,141	.80	4,126	.72	2,612	.50	3,198	.64	3,656	.68
Total, Iowa Sub-Division	4,715	.91	4,625	.81	2,950	.57	3,684	.74	4,241	.79
GRAND TOTAL – DIVISION NO. II	92,849	17.85	97,178	16.95	67,734	13.08	76,010	15.18	83,243	15.56
DIVISION NO. III										
Alabama – all	20,005	3.85	21,001	3.66	19,766	3.82	17,621	3.52	17,944	3.35
Georgia – all	66	.01	60	.01	77	.01	59	.01	45	.01
Southern Tennessee 3/	1,207	.23	1,291	.23	1,192	.23	1,219	.24	1,240	.23
GRAND TOTAL – DIVISION NO. III	21,278	4.09	22,352	3.90	21,035	4.06	18,899	3.77	19,229	3.59
DIVISION NO. IV										
Southwestern Coals Sub-Division:										
Kansas – all	4,524	.87	4,416	.77	3,444	.67	2,810	.56	2,976	.56
Missouri – all	2,694	.52	3,009	.52	3,064	.59	3,732	.74	4,030	.75
Oklahoma – High Volatile 4/	1,946	.37	2,329	.41	3,211	.62	2,784	.56	2,940	.55
Total, Southwestern Coals Sub-Div.	9,164	1.76	9,754	1.70	9,719	1.88	9,326	1.86	9,946	1.86
Arkansas-Oklahoma Smokeless Sub-Division:										
Arkansas – all	1,220	.24	1,459	.25	1,549	.30	1,661	.33	1,695	.31
Oklahoma – Low Volatile 5/	380	.07	514	.09	607	.12	718	.14	834	.16
Total, Ark.-Okla. Smokeless Sub-Div.	1,600	.31	1,973	.34	2,156	.42	2,379	.47	2,529	.47
Texas – all	1,009	.19	1,091	.19	1,326	.25	1,182	.24	1,101	.21
GRAND TOTAL – DIVISION NO. IV	11,773	2.26	12,818	2.23	13,201	2.55	12,887	2.57	13,576	2.54
DIVISION NO. V										
Southern Col. and Northern N. Mex. 6/	9,111	1.75	9,437	1.65	9,133	1.77	8,615	1.72	8,179	1.53
Central and Southern New Mexico 7/	1,049	.20	1,069	.19	1,085	.21	1,049	.21	1,171	.22
Northern Colorado 8/	2,707	.52	2,949	.51	2,441	.47	2,896	.58	3,194	.60
Utah – all	4,690	.90	4,374	.76	4,782	.93	4,843	.97	5,161	.96
Wyoming:										
Southern 9/	5,039	.97	4,934	.86	5,011	.97	5,092	1.02	5,249	.98
Northern	1,514	.29	1,578	.28	1,743	.33	1,480	.29	1,456	.27
Total, Wyoming	6,553	1.26	6,512	1.14	6,754	1.30	6,572	1.31	6,705	1.25
Montana – all	3,044	.59	2,798	.49	3,144	.60	3,324	.66	3,407	.64
Washington – all	2,538	.49	2,587	.45	2,635	.51	2,519	.50	2,521	.47
North Dakota and South Dakota:										
North Dakota – all	1,325	.26	1,370	.24	1,528	.29	1,650	.33	1,862	.35
South Dakota – all	14	—	15	—	12	—	14	—	13	—
Total, North Dakota and South Dakota	1,339	.26	1,385	.24	1,540	.29	1,664	.33	1,875	.35
All Other Western States 10/	13	—	19	—	32	.01	27	.01	20	--
GRAND TOTAL – DIVISION NO. V	31,044	5.97	31,130	5.43	31,546	6.09	31,509	6.29	32,233	6.02
Alaska – all	83	.02	87	.02	104	.02	126	.03	101	.02
UNITED STATES	520,053	100.00	573,367	100.00	517,763	100.00	500,745	100.00	534,989	100.00

Code Authority Areas (Official boundaries finally agreed on)	1930 Thousands of net tons	1930 Percent of total	1931 Thousands of net tons	1931 Percent of total	1932 Thousands of net tons	1932 Percent of total	1933 Thousands of net tons	1933 Percent of total	1934 preliminary Thousands of net tons	1934 preliminary Percent of total
DIVISION NO. I										
Eastern Sub-Division:										
Central Pennsylvania	39,103	8.36	33,883	8.87	27,854	8.99	29,828	8.94	a/ 35,337 (Central Pennsylvania and Somerset)	9.86
Somerset	5,950	1.27	5,406	1.42	3,547	1.15	3,401	1.02		
Maryland-Upper Potomac	3,507	.75	2,953	.77	2,174	.70	2,258	.68	a/ 2,462	.69
Total Eastern Sub-Division	48,560	10.38	42,242	11.06	33,575	10.84	35,487	10.64	37,794	10.55
Western Pennsylvania Sub-Division	79,410	16.99	58,370	15.27	43,375	14.01	46,066	13.81	53,891	15.04
Ohio Sub-Division:										
Ohio – all	22,552	4.83	20,411	5.34	13,910	4.49	19,589	5.87	20,842	5.82
Panhandle of West Virginia	5,114	1.09	4,054	1.06	3,645	1.18	4,096	1.23	3,982	1.11
Michigan – all	661	.14	359	.10	446	.14	407	.12	b/ 631	.18
Total, Ohio Sub-Division	28,327	6.06	24,824	6.50	18,001	5.81	24,092	7.22	25,455	7.10
Northern West Virginia	25,752	5.51	20,819	5.45	16,773	5.42	18,989	5.69	19,114	5.33
Southern Low Volatile (No. 1)										
Bituminous coal 1/	51,165	10.94	43,542	11.39	36,804	11.88	41,657	12.48	43,992	12.28
Virginia semi-anthracite 2/	239	.05	183	.05	194	.06	165	.05	149	.04
Total, Southern No. 1	51,404	10.99	43,725	11.44	36,998	11.94	41,822	12.53	44,141	12.32
Southern High Volatile (No. 2) 1/	93,216	19.94	76,757	20.09	63,618	20.54	67,962	20.37	72,526	20.23
Western Kentucky	10,915	2.34	8,579	2.25	9,540	3.08	7,835	2.35	7,893	2.20
GRAND TOTAL – DIVISION NO. I	337,584	72.21	275,316	72.06	221,880	71.64	242,253	72.61	260,814	72.77
DIVISION NO. II										
Illinois Sub-Division	53,731	11.49	44,303	11.59	33,474	10.81	37,413	11.21	40,905	11.42
Indiana Sub-Division	16,490	3.53	14,295	3.74	13,324	4.30	13,761	4.13	14,820	4.14
Iowa Sub-Division:										
Wayne and Appanoose counties	606	.13	564	.15	643	.21	340	.10	3,345 (Wayne and Appanoose counties and Rest of State)	.93
Rest of State	3,287	.70	2,825	.74	3,219	1.04	2,855	.86		
Total, Iowa Sub-Division	3,893	.83	3,389	.89	3,862	1.25	3,195	.96	3,345	.93
GRAND TOTAL – DIVISION NO. II	74,114	15.85	61,987	16.22	50,660	16.36	54,369	16.30	59,070	16.48
DIVISION NO. III										
Alabama – all	15,570	3.33	11,999	3.14	7,857	2.54	8,760	2.63	9,596	2.68
Georgia – all	7	—	21	.01	27	.01	42	.01	1,003 (Georgia and Southern Tennessee)	.28
Southern Tennessee 3/	1,111	.24	978	.25	821	.26	968	.29		
GRAND TOTAL – DIVISION NO. III	16,688	3.57	12,998	3.40	8,705	2.81	9,770	2.93	10,599	2.96
DIVISION NO. IV										
Southwestern Coals Sub-Division:										
Kansas – all	2,430	.52	1,987	.52	1,993	.63	2,218	.66	5,800 (Kansas and Missouri)	1.62
Missouri – all	3,853	.82	3,620	.95	4,070	1.31	3,432	1.03		
Oklahoma – High Volatile 4/	2,195	.47	1,389	.36	844	.27	808	.24	2,264 (Oklahoma High Volatile and Ark.-Okla. Smokeless Sub-Div.)	.63
Total, Southwestern Coals Sub-Div.	8,478	1.81	6,996	1.83	6,867	2.21	6,458	1.93		
Arkansas-Oklahoma Smokeless Sub-Division:										
Arkansas – all	1,533	.33	1,154	.30	1,034	.34	883	.26		
Oklahoma – Low Volatile 5/	599	.13	519	.14	411	.13	430	.13		
Total, Ark.-Okla. Smokeless Sub-Div.	2,132	.46	1,673	.44	1,445	.47	1,313	.39		
Texas – all	834	.17	716	.18	636	.21	822	.25	c/ 716	.20
GRAND TOTAL – DIVISION NO. IV	11,444	2.44	9,385	2.45	6,948	2.09	8,593	2.57	8,780	2.45
DIVISION NO. V										
Southern Col. and Northern N. Mex. 6/	6,350	1.36	4,645	1.22	3,677	1.18	3,444	1.03	3,549	.99
Central and Southern New Mexico 7/	977	.21	785	.21	637	.21	605	.18	573	.16
Northern Colorado 8/	2,839	.61	2,727	.71	2,544	.82	2,408	.72	2,296	.64
Utah – all	4,257	.91	3,350	.88	2,852	.92	2,675	.80	2,415	.67
Wyoming:										
Southern 9/	4,816	1.03	4,022	1.05	3,338	1.08	3,255	.98	3,547	.99
Northern	1,272	.27	972	.25	833	.27	758	.22	802	.22
Total, Wyoming	6,088	1.30	4,994	1.30	4,171	1.35	4,013	1.20	4,349	1.21
Montana – all	3,022	.65	2,378	.62	2,125	.69	2,152	.65	2,600	.73
Washington – all	2,302	.49	1,846	.48	1,592	.51	1,394	.42	1,387	.39
North Dakota and South Dakota:										
North Dakota – all	1,700	.36	1,519	.40	1,740	.56	1,782	.53	1,770	.49
South Dakota – all	13	—	28	.01	49	.02	59	.02	60	.02
Total, North Dakota and South Dakota	1,713	.36	1,547	.41	1,789	.58	1,841	.55	1,830	.51
All Other Western States 10/	28	.01	25	.01	23	.01	18	.01	18	.01
GRAND TOTAL – DIVISION NO. V	27,576	5.90	22,297	5.84	19,414	6.27	18,550	5.56	19,020	5.31
Alaska – all	120	.03	106	.03	103	.03	96	.03	112	.03
UNITED STATES	467,526	100.00	382,089	100.00	309,710	100.00	333,631	100.00	358,395	100.00

(1) Note that official boundaries finally agreed upon include certain border-line high volatile mines within the limits of Southern Sub-Division No. 1, rather than within Southern Sub-Division No. 2. (2) Prior to September, 1934, the hard coal mines in Montgomery and Pulaski counties, Virginia, were officially considered a portion of Southern Sub-Division No. 1 of Division I. (3) Includes Bledsoe, Grundy, Hamilton, Marion, Rhea, Sequatchie, Van Buren, Warren, White counties, and mines in Cumberland County on the Nashville, Chattanooga, and St. Louis Railroad. (4) Includes all counties in Oklahoma except Leflore, Haskell, and Sequoyah. (5) Includes Leflore, Haskell, and Sequoyah counties. (6) Includes all counties in Colorado except those included in Northern Colorado. Also, Colfax County, New Mexico. (7) Includes all counties in New Mexico except Colfax. (8) Includes Adams, Arapahoe, Boulder, Douglas, Elbert, El Paso, Jackson, Jefferson, Larimer, and Weld counties. (9) Includes Albany, Carbon, Lincoln, Sweetwater, and Uinta counties. (10) Includes Arizona, California, Idaho, Nebraska, Nevada, and Oregon.

(a) Since February 15, when the preliminary totals for 1934 were made, the Bureau has received a revision from the Code Authority Statistician which shows 35,338,000 tons for Central Pennsylvania and Somerset and 7,506,000 tons for Maryland-Upper Potomac. See Table 8, W. C. R. 922, p. 4. (b) Since the preliminary totals for 1934 were made, the Bureau has received a more complete record from the Code Authority, indicating 647,952 tons accounted for, with certain small mines still to be heard from. (c) Since the preliminary totals for 1934 were made, the Bureau has received reports from 2 additional mines which would increase Texas to 779,000 tons.

Prepared by W. H. Young, H. L. Wilson, and L. L. Anderson
Statistics Section, Coal Division.
U. S. Bureau of Mines.

April 10, 1935.

9837

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D. Ex. 9

DISTRIBUTION OF BITUMINOUS COAL PRODUCED IN 1929 ACCORDING TO THE RECORDS OF THE U. S. BUREAU OF MINES, GROUPED BY STATE OF ORIGIN

(Compiled from U. S. Bureau of Mines Monthly Coal Distribution Reports with additional data for the small production of North Carolina, Arizona, California, Idaho, Nevada, Oregon, and South Dakota)

Destination	Central Pennsylv. (1)	Somerset Meyersdale (2)	Western Pennsylv. (3)	Northern Ohio (4)	Southern Ohio (5)	Michigan Fields (6)	East Virginia Fields [a] (7)	Northern West (8)	New River-Winding (9)	Cumberland Piedmont (10)	Logan Kanawha (11)	Pocahontas Tug River (12)	Southwestern Virginia (13)
1. Used at mines for power and heat, not sold	393,190	52,025	790,669	215,186	66,751	46,427	18,780	78,868	600,662	78,819	[illegible]	105,538	41,888
2. Made into coke at mines (once shipped in railroad cars)	750,000	—	8,953,866	—	—	—	—	—	820,749	139,932	[illegible]	89,868	195,358
3. Local sales by truck and wagon, etc.	4,019,099	480,098	3,017,649	2,196,423	531,864	16,799	1,380,370	738,798	832,693	148,993	303,870	791,698	91,373
51. Shipped to tidewater piers [g]	9,070,576	2,198,779	1,526,355	—	—	—	—	2,168,764	10,360,198	1,978,676	2,157,923	6,566,911	1,886,208
52. Shipped to Great Lakes piers [g]	180,186	—	6,117,779	3,990,000	578,135	—	421,863	3,510,653	1,398,099	2,642	10,152,894	6,273,956	162,511
53. Exported by rail	1,491,060	18,883	1,930,345	1,077,486	2,771	—	81,537	893,552	52,889	3,186	276,128	205,380	11,989
54. Railroad fuel delivered by all-rail routes	12,575,761	688,186	14,633,777	9,087,210	2,070,435	168,212	2,389,481	3,850,175	600,446	779,070	3,830,475	526,076	2,935,818
55. Total accounted for	65,164,326	7,393,389	91,738,943	18,865,361	9,381,382	826,886	6,338,437	80,165,305	86,806,799	9,094,418	50,573,133	30,773,913	11,489,873

a/ See also West Virginia portions of the borderline fields in columns (10), (11) and (12). The total production for West Virginia was 138,518,893 tons.
b/ The total production of the State of Maryland, all of which is included in this field, was 2,609,114 tons.
c/ See also Virginia portion of the borderline field in column 12. The total production of Virginia was 12,848,974 tons.
d/ Includes Virginia semi-anthracite.
e/ See also Kentucky portions of the borderline fields in columns (11) and (19). The total production for Kentucky was 60,463,600 tons.
f/ The total production of the State of Tennessee was 5,409,000 tons and the total production of the State of Georgia was 20,504 tons, all of which is included in this field.
g/ Coal consigned to tidewater and Great Lakes piers is re-shipped by water or used as steamship fuel.

By W. H. Young and R. L. Reyes
Coal Economics Division
U. S. Bureau of Mines
October 23, 1935.

Plaintiff's Ex. 67
10866

M.C.D.
No. 8

SOURCES OF COAL USED FOR RAILROAD FUEL, 1929

A REPORT IN COOPERATION WITH THE BROOKINGS INSTITUTION

The following tables analyze the sources of railroad fuel coal received by Class I railroads in 1929. They are based on reports courteously supplied to the Bureau of Lines by the fuel agents of the individual roads. The Institute of Economics of the Brookings Institution has collaborated in the planning of the investigation and the analysis of the results. The year 1929 was selected for analysis, because comparable figures have been obtained for other classes of consumers, so as to give for the first time a fairly complete picture of the sources of coal used in each part of the country. It is believed that the results will be useful both to railroad fuel agents and to sales managers and distributors of coal.

The striking changes in the sources of railroad fuel since the war are summarized in the diagram on page 1 of the accompanying Monthly Distribution Report.

FUEL COAL DELIVERED TO CLASS I RAILROADS, BY MINING DISTRICTS, 1917, 1928, AND 1929, IN NET TONS

Mining district	1917	1928	1929	Per cent 1929 was of 1917
Central Pennsylvania	18,163,708	9,503,886	9,462,326	52.1
Somerset-Meyersdale	2,575,647	876,148	901,978	35.0
Cumberland-Piedmont	524,462	413,023	646,614	123.3
Western Pennsylvania [a]	14,482,014	16,362,752	17,707,478	122.3
Nor. and East. Ohio; Panhandle	8,478,019	6,960,919	8,913,745	105.1
Southern Ohio	4,432,057	895,294	1,675,608	37.8
Northern West Virginia	5,839,967	10,680,372	11,150,408	190.9
Kanawha, Logan, Kenova-Thacker	6,322,007	11,578,975	10,622,799	168.0
New River	[b] 2,224,395	126,287	102,807	31.9
Pocahontas		550,042	607,790	
Virginia	2,909,893	2,919,513	3,085,804	106.0
North Carolina	- - -	47,320	42,187	
Northeastern Kentucky [c]	470,059	501,207	642,307	136.6
Hazard	250,000	752,207	797,810	319.1
Southeastern Kentucky	1,071,971	2,086,270	2,010,373	187.5
Tennessee	2,377,884	2,538,581	2,335,956	98.2
Alabama	5,311,857	4,972,705	5,135,611	96.7
Michigan	345,415	398,316	482,212	139.6
Illinois	33,696,513	18,761,214	19,910,681	59.1
Indiana	7,038,408	5,487,397	6,111,030	86.8
Western Kentucky	2,796,025	4,196,625	4,203,264	150.2
Iowa	4,369,482	1,401,598	1,563,547	35.8
Kansas and Missouri	5,102,966	1,706,840	1,858,327	36.4
Arkansas	663,069	534,267	431,750	65.1
Oklahoma	2,233,022	1,408,155	1,487,285	66.6
Texas	910,311	109,589	106,457	11.7
North Dakota	26,355	30,840	28,911	109.7
Montana	2,109,728	2,147,352	2,183,590	103.5
Wyoming	5,259,437	4,232,365	4,407,795	83.8
Colorado	2,967,819	2,290,481	2,189,776	73.8
New Mexico	1,979,673	1,449,444	1,366,296	69.0
Utah	912,500	726,139	730,481	80.1
Washington	1,963,818	899,647	881,491	44.9
Oregon	2,101	1,140	5,743	273.3
Canada	585,139	254,820	267,863	45.8
Confiscated and unknown	1,685,746	263,109	101,838	6.0
Total bituminous	150,083,527	118,070,039	124,159,938	82.7
Anthracite	5,293,301	3,589,530	3,162,727	59.7
Grand total	155,376,828	121,659,569	127,322,665	81.9

(a) Includes Pittsburgh, Westmoreland, Connellsville, Freeport, and Northwestern Pennsylvania. (b) There is a possibility that about 400,000 tons of coal in the New River district in 1917 was high volatile coal from Kanawha district. If so, the percentage for 1929 as compared with 1917 for New River and Pocahontas combined would amount to about 39 per cent instead of 31.9 per cent as shown in the table. (c) Includes tonnages derived from the McRoberts district on the Louisville and Nashville Railroad which amounted to 313,046 tons in 1917; 246,136 in 1928; and 264,903 in 1929.

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These figures include coal used by Class I railroads at shops, round-houses, and stations as well as for locomotive fuel. They do not include Class II railroads, whose consumption is about 1,177,000 tons, or switching and terminal companies, whose consumption is about 3,233,000 tons. The figures represent receipts, which is not exactly the same as consumption.

The following table shows that there are wide variations in the percentages of total railroad fuel coal moving from the different mining districts on which freight was paid and on which no freight was paid. Where the percentage of the tonnage on which no freight was paid was high, the indications are that the mining district has an advantage in marketing coal to the railroads. Ninety per cent or more of the railroad tonnage from the following mining districts paid no freight in 1929: West Virginia Panhandle, Michigan, Iowa, Kansas-Missouri, Arkansas, Oklahoma, Texas, North Dakota, Montana, Northern Wyoming, New Mexico, Washington, North Carolina, and Oregon.

RAILROAD FUEL COAL ON WHICH FREIGHT WAS PAID AND ON WHICH NO FREIGHT WAS PAID, BY MINING DISTRICTS, 1929, IN NET TONS

Mining district	Freight paid		No freight paid		Total
	Net tons	Per cent	Net tons	Per cent	Net tons
Central Pennsylvania	3,822,090	40.4	5,640,236	59.6	9,462,326
Somerset-Meyersdale	516,928	57.3	385,050	42.7	901,978
Cumberland-Piedmont	237,593	36.7	409,021	63.3	646,614
Connellsville and Westmoreland	803,731	14.1	4,880,990	85.9	5,684,721
Pittsburgh	3,344,289	48.7	3,516,211	51.3	6,860,500
Northern Pennsylvania	1,316,166	25.5	3,846,091	74.5	5,162,257
Northern and Eastern Ohio	3,197,697	49.5	3,261,367	50.5	6,459,064
Southern Ohio	469,043	28.0	1,206,565	72.0	1,675,608
Panhandle	185,220	7.5	2,269,461	92.5	2,454,681
Northern West Virginia	7,428,787	66.6	3,721,621	33.4	11,150,408
Kanawha	1,323,867	40.6	1,940,655	59.4	3,264,522
Logan	3,006,912	70.7	1,244,383	29.3	4,251,295
Kenova-Thacker	701,429	22.6	2,405,553	77.4	3,106,982
New River	47,905	46.6	54,902	53.4	102,807
Pocahontas	85,980	14.1	521,810	85.9	607,790
Virginia	1,192,639	38.6	1,893,165	61.4	3,085,804
North Carolina	- - -	- -	42,187	100.0	42,187
Northeastern Kentucky	218,029	33.9	424,278	66.1	642,307
Hazard	298,925	37.5	498,885	62.5	797,810
Southeastern Kentucky	485,935	24.2	1,524,438	75.8	2,010,373
Tennessee	471,276	20.2	1,864,680	79.8	2,335,956
Alabama	1,266,567	24.7	3,869,044	75.3	5,135,611
Michigan	198	0.1	482,014	99.9	482,212
Illinois	3,940,939	19.8	15,969,742	80.2	19,910,681
Indiana	991,077	16.2	5,119,953	83.8	6,111,030
Western Kentucky	987,878	23.5	3,215,386	76.5	4,203,264
Iowa	46	- -	1,563,501	100.0	1,563,547
Kansas and Missouri	90,063	4.8	1,768,264	95.2	1,858,327
Arkansas	6,230	1.4	425,520	98.6	431,750
Oklahoma	126,274	8.5	1,361,011	91.5	1,487,285
Texas	7,636	7.2	98,821	92.8	106,457
North Dakota	1,481	5.1	27,430	94.9	28,911
Montana	- - -	- -	2,183,590	100.0	2,183,590
Northern Wyoming	- - -	- -	434,008	100.0	434,008
Southern Wyoming	409,017	10.3	3,564,770	89.7	3,973,787
Colorado	871,898	39.8	1,317,878	60.2	2,189,776
New Mexico	142	- -	1,366,154	100.0	1,366,296
Utah	359,352	49.2	371,129	50.8	730,481
Washington	18,041	2.0	863,450	98.0	881,491
Oregon	- - -	- -	5,743	100.0	5,743
Canada	61,983	23.1	205,880	76.9	267,863
Confiscated and Unknown	93,176	91.5	8,662	8.5	101,838
Total Bituminous	38,386,439	30.9	85,773,499	69.1	124,159,938
Anthracite	254,643	8.1	2,908,084	91.9	3,162,727
Grand total	38,641,082	30.3	88,681,583	69.7	127,322,665

M.C.D. No. 8

FUEL COAL DELIVERED TO CLASS I RAILROADS, BY PRODUCING DISTRICTS AND BY CONSUMING REGIONS, IN 1929, IN NET TONS 10866

Mining district	New England region	Great Lakes region	Central Eastern region	Pocahontas region	Southern region	Northwestern region	Central Western region	Southwestern region	Total
Central Pennsylvania	880,379	6,567,047	2,014,730	- - -	- - -	170	- - -	- - -	9,462,326
Somerset-Meyersdale	- - -	155	901,823	- - -	- - -	- - -	- - -	- - -	901,978
Cumberland-Piedmont	- - -	5,715	640,899	- - -	- - -	- - -	- - -	- - -	646,614
Connellsville and Westmoreland	380,265	285,267	5,019,189	- - -	- - -	- - -	- - -	- - -	5,684,721
Pittsburgh	- - -	2,573,845	2,958,297	- - -	- - -	1,328,358	- - -	- - -	6,860,500
Northern Pennsylvania	- - -	1,326,002	3,836,255	- - -	- - -	- - -	- - -	- - -	5,162,257
Northern and Eastern Ohio	- - -	2,097,792	2,847,966	- - -	- - -	1,513,306	- - -	- - -	6,459,064
Southern Ohio	- - -	1,049,876	612,636	- - -	- - -	13,096	- - -	- - -	1,675,608
Panhandle	- - -	49,593	2,320,088	- - -	- - -	85,000	- - -	- - -	2,454,681
Northern West Virginia	1,303,704	3,070,192	5,303,809	- - -	- - -	1,472,703	- - -	- - -	11,150,408
Kanawha	- - -	1,107,536	43,965	1,788,888	323,982	- - -	- - -	151	3,264,522
Logan	1,380,935	1,153,267	234,073	1,244,383	194,232	44,405	- - -	- - -	4,251,295
Kenova-Thacker	154	88,508	194,296	2,405,553	418,276	195	- - -	- - -	3,106,982
New River	40,189	2,249	747	57,105	- - -	397	2,120	- - -	102,807
Pocahontas	59,697	4,570	10,113	522,535	- - -	10,875	- - -	- - -	607,790
Virginia	- - -	- - -	47	201,018	2,884,428	311	- - -	- - -	3,085,804
North Carolina	- - -	- - -	- - -	- - -	42,187	- - -	- - -	- - -	42,187
Northeastern Kentucky	- - -	8,549	156,262	187,617	236,661	53,218	- - -	- - -	642,307
Hazard	- - -	55,349	243,576	- - -	498,885	- - -	- - -	- - -	797,810
Southeastern Kentucky	- - -	25,522	202,712	- - -	1,782,139	- - -	- - -	- - -	2,010,373
Tennessee	- - -	- - -	- - -	- - -	2,334,241	- - -	- - -	1,715	2,335,956
Alabama	- - -	- - -	- - -	- - -	4,517,884	- - -	- - -	617,727	5,135,611
Michigan	- - -	482,212	- - -	- - -	- - -	- - -	- - -	- - -	482,212
Illinois	- - -	2,595,492	1,820,332	- - -	3,276,008	4,576,962	5,615,984	2,025,903	19,910,681
Indiana	- - -	363,573	2,316,289	- - -	443,323	2,969,052	18,723	- - -	6,111,030
Western Kentucky	- - -	243,695	173,902	- - -	3,454,709	59,713	68,902	202,283	4,203,264
Iowa	- - -	39,806	- - -	- - -	- - -	515,015	1,008,726	- - -	1,563,547
Kansas and Missouri	- - -	35,267	- - -	- - -	- - -	11,879	846,796	1,364,385	1,858,327
Arkansas	- - -	- - -	- - -	- - -	- - -	95	- - -	431,655	431,750
Oklahoma	- - -	- - -	- - -	- - -	- - -	- - -	816,197	671,088	1,487,285
Texas	- - -	- - -	- - -	- - -	- - -	- - -	45,439	61,018	106,457
North Dakota	- - -	- - -	- - -	- - -	- - -	28,911	- - -	- - -	28,911
Montana	- - -	- - -	- - -	- - -	- - -	2,183,590	- - -	- - -	2,183,590
Northern Wyoming	- - -	- - -	- - -	- - -	- - -	25,213	408,795	- - -	434,008
Southern Wyoming	- - -	- - -	- - -	- - -	- - -	184,419	3,789,368	- - -	3,973,787
Colorado	- - -	- - -	- - -	- - -	- - -	410	1,972,008	217,358	2,189,776
New Mexico	- - -	- - -	- - -	- - -	- - -	- - -	1,365,238	58	1,366,296
Utah	- - -	- - -	- - -	- - -	- - -	88	730,393	- - -	730,481

No. 8. FUEL COAL DELIVERED TO CLASS I RAILROADS, BY PRODUCING DISTRICTS AND BY CONSUMING REGIONS, IN 1929, IN NET TONS (Cont'd)

Mining district	New England region	Great Lakes region	Central eastern region	Pocahontas region	Southern region	Northwestern region	Central Western region	Southwestern region	Total
Washington	- - -	- - -	- - -	- - -	- - -	881,491	- - -	- - -	881,491
Oregon	- - -	- - -	- - -	- - -	- - -	- - -	5,743	- - -	5,743
Canada	43,000	- - -	- - -	- - -	- - -	224,863	- - -	- - -	267,863
Confiscated and Unknown	- - -	11,250	18,857	6,858	223	52,846	11,774	30	101,838
Total bituminous	4,088,323	23,242,329	31,870,863	6,413,957	20,407,178	16,236,581	16,307,336	5,593,371	124,159,938
Anthracite	10,479	1,851,157	1,296,931	133	1,728	2,262	- - -	37	3,162,727
Grand total	4,098,802	25,093,486	33,167,794	6,414,090	20,408,906	16,238,843	16,307,336	5,593,408	127,322,665

Comparability of reports from fuel agents and from traffic managers:- Because of differences in coal trade terminology the fuel agents did not always use the same district names in reporting their purchases but every effort has been made to keep the district classification as constant as the records of the carriers permit. The figures are as reported by the fuel agents of the consuming railroads and therefore differ slightly from the shipments of railroad fuel out of each mining district, as reported by the traffic managers of the originating carriers. See Supplement to Monthly Coal Distribution Report No. I, pages 1-2. In a few cases the differences are rather large due to the fact that the purchasing agents defined the boundaries of the district differently from the traffic managers. It should be noted, also, that the figures shown here represent all coal received by railroads including all-rail, tide-water, and lake cargo while the traffic managers reported only the all-rail railroad fuel.

Origin by districts, 1917, 1928 and 1929:- The first table shows the quantity originating in each mining district, and for purposes of comparison the corresponding figures for 1917 are given. In 1917 the Class I roads purchased 150,083,527 tons of bituminous coal. The 1929 purchases were thus only 82.7 per cent of those in 1917. The decrease in comparison with 1917, however, was not uniformly distributed among the mining districts. In general, the high-volatile fields of West Virginia and Kentucky show a large increase in sales to the railroads, while the low-volatile fields and many of the northern and western high-volatile fields show a very sharp decline.

Railroad fuel coal delivered to Class I railroads, by all-rail, by tidewater, and by Great Lakes:- In 1929, 120,923,932 tons or 94.9 per cent of the coal delivered to Class I railroads, moved all-rail, 1.4 per cent by tidewater, and 3.7 per cent by way of the Great Lakes. The railroads of the New England Region received 41.8 per cent of their fuel coal by tidewater while the railroads of the Northwestern Region received 27.8 per cent of their tonnage by way of the Great Lakes.

Source of coal by railroad regions, 1929:- The last table shows the source of coal received by the Class I railroads in the eight railroad regions established by the Interstate Commerce Commission. The railroads in the various regions, generally speaking, drew fuel coal from many mining districts, yet the greater percentage of their tonnage was obtained from a few mining districts. Usually, the districts from which the bulk of the tonnage was obtained were in close proximity to the railroad region, there being exceptions, however. The railroads in the New England region drew their coal chiefly from Central Pennsylvania, Northern West Virginia, and Logan. The railroads of the Northwest obtained fuel coal from mining districts in the Northwest, the Middle West, and from the Appalachian area by way of the Great Lakes.

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March 21, 1932.

DISTRIBUTION OF THE TOTAL NATIONAL SUPPLY OF BITUMINOUS COAL IN 1929, DIVIDED BETWEEN INTERSTATE, INTRASTATE, AND RAILROAD FUEL

(Compiled from the reports and original records of the Bureau of Mines so as to segregate interstate from intrastate tonnage as accurately as possible.

Railroad fuel has to be shown separately since there is no possible way of telling just where it is consumed, although it is known that the great bulk of it moves across State lines or is burned in locomotives hauling trains that cross State lines. Only the fuel delivered to railroads subject to the jurisdiction of the Interstate Commerce Commission has been included (Classes I, II, and III, switching and terminal).

With respect to the coal delivered to other consumers, the records permit accurate separation of shipments to interstate and intrastate destinations for fully 98.2 percent of the tonnage. In order to complete the picture, the remaining 1.8 percent has been apportioned by estimate on the basis of all available data. The possible error in such estimates has no significant effect on the result.

Figures include, for convenience, lignite and the small production of anthracite and semianthracite outside of Pennsylvania. Alaska, however, is not included.)

Item	Net tons	Percent of balance available for sale (item 3)
1. Total supply accounted for a/	536,603,000	X X
2. Deduct coal-mine fuel, not available for sale b/	4,660,000	X X
3. Balance, available for sale	531,945,000	100.00
4. Local sales by truck and wagon, used by employees, or taken by railroad locomotives at tipple b/ (Counted as INTRASTATE, although includes some interstate)	23,253,000	4.37
5. Coal equivalent of beehive coke shipped from mines: c/		
6. INTERSTATE destinations	4,295,000	0.81
7. INTRASTATE destinations	4,833,000	0.91
8. RAILROAD FUEL delivered to carriers subject to jurisdiction of the Interstate Commerce Commission: d/		
9. All-rail (or river) deliveries e/	120,048,000	22.57
10. Via tidewater f/	1,677,000	0.31
11. Via Great Lakes f/	4,676,000	0.88
12. INTERSTATE (and foreign) shipments to OTHER consumers (including steamship fuel g/):		
13. All rail (or river) h/	194,466,000	36.56
14. Via tidewater i/	32,916,000	6.18
15. Via Great Lakes j/	34,437,000	6.47
16. INTRASTATE shipments to OTHER consumers (including steamship fuel g/):		
17. All rail (or river) h/	109,780,000	20.64
18. Via tidewater i/	1,462,000	0.28
19. Via Great Lakes j/	92,000	0.02
20. RECAPITULATION		
21. INTERSTATE (and foreign) shipments plus railroad fuel delivered to carriers subject to jurisdiction of the Interstate Commerce Commission k/	392,515,000	73.79
22. INTRASTATE shipments plus local sales l/	139,430,000	26.21
23. Grand total, available for sale	531,945,000	100.00

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DISTRIBUTION OF THE TOTAL NATIONAL SUPPLY OF BITUMINOUS COAL IN 1929, DIVIDED BETWEEN INTERSTATE, INTRASTATE, AND RAILROAD FUEL — FOOTNOTES

a/ As the figures represent distribution, involve changes in stocks, and are taken from several sources, they differ slightly from the production, which was reported by the mine operators as 534,887,983 tons in 1929, not including Alaska.

b/ Total as reported by mine operators.

c/ A number of operators market part of their coal in the form of coke, made in beehive ovens at the mines. In 1929, they reported shipping 3,020,112 tons of coke to interstate destinations and 3,406,136 tons to intrastate destinations, and the total tonnage of raw coal charged in the ovens has been apportioned accordingly.

d/ About 6 percent of the railroad fuel coal is used by the carriers in shops, round-houses, and stations. The other 95 percent is used as locomotive fuel.

e/ As reported by the traffic managers of all originating carriers to the Bureau of Mines, supplemented by reports from the fuel agents of Class I roads. Includes all-rail (or all-river) deliveries to Class I, II, and III, switching and terminal railroads, so far as records of reporting companies could identify the same.

f/ As reported to the Bureau of Mines by the fuel agents of all Class I roads.

g/ The trifling amounts of steamship fuel used by river vessels are credited to the State in which the coal was delivered to the vessel. In the more important Great Lakes and tidewater bunker trades, nearly all coal supplied for steamship fuel is known to be shipped across State lines before delivery to the vessel or else to be burned on voyages to foreign countries or on coastwise voyages between more than one State. At some ports, such as Cleveland, Ohio, coal from mines within the State is delivered to tugs, ferries, or other local vessels that do not cross to ports in another State, and such coal, so far as it can be estimated, is counted as intrastate. The possible effect of such estimate upon the total is negligible.

h/ From U. S. Bureau of Mines, Supplements to Monthly Distribution Reports Numbers 1, 2, 4, and 6. A small portion of the tonnage which is originated in coal fields that lie in two adjoining States and shipped to points within those two States has been apportioned between interstate and intrastate, partly by estimate. The possible effect of such estimates upon the total is not significant.

i/ In the U. S. Bureau of Mines 1929 survey of distribution (Supplements to Monthly Distribution Reports Numbers 1, 3, 4, and 6) the total tonnage accounted for as shipped from the mines to tidewater is 36,064,877 tons. This has been apportioned between interstate and intrastate on the basis of the following information:

Detailed reports from the railroads operating tidewater piers at the ports of New York, Philadelphia, Baltimore, Hampton Roads, and Charleston show the tonnage handled by field of origin and by destination. This permits positive identification of nearly all the interstate movements. A few items which are partly interstate and partly intrastate have been apportioned by estimate, but the possible effect of such estimate upon the total is not significant. The total tonnage traced back to each field of origin in this way was then adjusted to agree with the total quantity reported by the traffic managers of the originating railroads as having left the mines in the field of origin and consigned to tidewater piers. A similar apportionment, using various local sources of information, has been made for the small tonnage handled over tidewater piers on the Gulf and the Pacific Coast.

This method showed 1,462,000 tons of intrastate business and 37,487,000 tons of interstate business. Out of the latter figure, 1,677,000 tons is known to have been railroad fuel, covered in item (10). Deducting this leaves 32,916,000 tons of interstate tidewater business other than railroad fuel.

j/ Based upon detailed records of tonnage dumped over the lake docks, classified by railroad of origin and destination. This permits positive identification of nearly all the interstate movements. A few small items which are partly interstate and partly intrastate have been apportioned by estimate, but the possible effect of such estimates upon the total is not significant. A slight adjustment has been made by deducting 86,000 tons from the indicated interstate shipments to consumers other than railroads, in order to make the final total agree with the quantity reported by the traffic managers of the originating railroads as leaving the mines and consigned to lake ports.

Note that these figures represent movement by vessel only. Shipments by car ferry are counted as all rail.

k/ Items (13) + (14) + (15) + (6) + (9) + (10) + (11).

l/ Items (17) + (18) + (19) + (4) + (7).

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October 16, 1935.

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HOW INTRASTATE RAIL SHIPMENTS OF BITUMINOUS COAL TO OTHER LARGE CITIES OF INDIANA, ILLINOIS AND OHIO MEET COMPETITION FROM INTERSTATE RAIL SHIPMENTS (1929 data)

(The analysis of INTRA- and INTERstate competition shown in detail for Indianapolis in the preceding table is continued in summary form below. The table lists all destination cities which are shown in separate and comparable form in the records of the Ohio Bureau of Coal Statistics and the Illinois Freight Association in these 3 States characterized by large INTRAstate shipments. Details can be supplied if desired.)

Destination city	Origin fields	Net tons shipped in by rail during 1929		
		INTRAstate	INTERstate	Total
AKRON, Ohio	From same State - all Ohio fields	1,297,158	—	2,676,189
	From 6 other States - 19 fields	—	1,379,031	
	Percent of total	48.5%	51.5%	100.0%
ALKALI and PAINESVILLE[a], Ohio	From same State - all Ohio fields	7,023	—	742,663
	From 6 other States - 16 fields	—	735,640	
	Percent of total	0.9%	99.1%	100.0%
ALLIANCE, Ohio	From same State - all Ohio fields	164,903	—	252,325
	From 4 other States - 13 fields	—	87,822	
	Percent of total	65.2%	34.8%	100.0%
CANTON, Ohio	From same State - all Ohio fields	361,592	—	1,077,925
	From 5 other States - 16 fields	—	716,333	
	Percent of total	33.5%	66.5%	100.0%
CINCINNATI, Ohio[b]	From Ohio fields	3,512	—	1,914,244
	From 6 other States - 19 fields	1,910,732	—	
	Percent of total	b/	b/	100.0%
CLEVELAND, Ohio	From same State - all Ohio fields	1,395,922	—	7,914,892
	From 6 other States - 20 fields	—	6,518,970	
	Percent of total	17.6%	82.4%	100.0%
COLUMBUS, Ohio	From same State - all Ohio fields	397,616	—	1,248,112
	From 6 other States - 18 fields	—	850,496	
	Percent of total	31.9%	68.1%	100.0%
DAYTON, Ohio	From same State - all Ohio fields	29,907	—	951,657
	From 6 other States - 16 fields	—	921,750	
	Percent of total	3.1%	96.9%	100.0%
DELAWARE, Ohio	From same State - all Ohio fields	17,935	—	46,140
	From 4 other States - 13 fields	—	28,205	
	Percent of total	38.9%	61.1%	100.0%
FINDLAY, Ohio	From same State - all Ohio fields	50,025	—	147,841
	From 5 other States - 14 fields	—	97,816	
	Percent of total	33.8%	66.2%	100.0%
FOSTORIA, Ohio	From same State - all Ohio fields	21,963	—	72,093
	From 6 other States - 14 fields	—	50,130	
	Percent of total	30.5%	69.5%	100.0%
LIMA, Ohio	From same State - all Ohio fields	73,315	—	346,949
	From 5 other States - 15 fields	—	273,634	
	Percent of total	21.1%	78.9%	100.0%
LORAIN and SOUTH LORAIN, Ohio	From same State - all Ohio fields	114,474	—	2,344,530
	From 6 other States - 18 fields	—	2,230,056	
	Percent of total	4.9%	95.1%	100.0%
MANSFIELD, Ohio	From same State - all Ohio fields	118,701	—	226,572
	From 6 other States - 17 fields	—	107,871	
	Percent of total	52.4%	47.6%	100.0%
MARION, Ohio	From same State - all Ohio fields	27,237	—	172,428
	From 6 other States - 16 fields	—	145,191	
	Percent of total	15.8%	84.2%	100.0%
MASSILLON, Ohio	From same State - all Ohio fields	145,689	—	585,147
	From 4 other States - 12 fields	—	439,458	
	Percent of total	24.9%	75.1%	100.0%
MIAMI VALLEY, Ohio	From same State - all Ohio fields	5,624	—	1,852,418
	From 6 other States - 17 fields	—	1,846,794	
	Percent of total	0.3%	99.7%	100.0%
SANDUSKY, Ohio	From same State - all Ohio fields	62,206	—	190,405
	From 6 other States - 17 fields	—	128,199	
	Percent of total	32.7%	67.3%	100.0%
SPRINGFIELD, Ohio	From same State - all Ohio fields	11,218	—	265,999
	From 6 other States - 16 fields	—	254,781	
	Percent of total	4.2%	95.8%	100.0%
TOLEDO, Ohio	From same State - all Ohio fields	344,869	—	2,044,753
	From 6 other States - 18 fields	—	1,699,884	
	Percent of total	16.9%	83.1%	100.0%
YOUNGSTOWN and MAHONING VALLEY, Ohio	From same State - all Ohio fields	134,364	—	8,120,887
	From 6 other States - 20 fields	—	7,986,523	
	Percent of total	1.7%	98.3%	100.0%
FORT WAYNE, Indiana	From same State - all Indiana fields	19,393	—	681,536
	From 8 other States - 22 fields	—	662,143	
	Percent of total	2.8%	97.2%	100.0%
GAS BELT, Indiana	From same State - all Indiana fields	600,441	—	2,268,667
	From 8 other States - 26 fields	—	1,668,226	
	Percent of total	26.5%	73.9%	100.0%
INDIANAPOLIS, Indiana	From same State - all Indiana fields	1,811,688	—	3,424,065
	From 8 other States - 25 fields	—	1,612,377	
	Percent of total	52.9%	47.1%	100.0%
SOUTH BEND, Indiana	From same State - all Indiana fields	112,576	—	614,986
	From 8 other States - 25 fields	—	502,410	
	Percent of total	18.3%	81.7%	100.0%
PEORIA, Illinois	From same State - all Illinois fields	960,353	—	1,131,731
	From 8 other States - 17 fields	—	171,378	
	Percent of total	84.9%	15.1%	100.0%
CHICAGO DISTRICT[c] (Illinois and Indiana)	From Illinois fields	8,478,000 (To Illinois side)	1,615,000 (To Indiana side)	10,093,000
	From Indiana fields	448,000 (To Indiana side)	2,350,000 (To Illinois side)	2,798,000
	From 7 other States - 25 fields	—	19,413,000	19,413,000
	Total tonnage, Chicago district	8,926,000	23,378,000	32,304,000
	Percent of total	27.6%	72.4%	100.0%

a/ 1930 data.
b/ The Cincinnati district includes Covington, Kentucky, and several adjacent small towns immediately south of the Ohio River. The entire movement from Ohio fields to the Cincinnati district was only 3,512 tons, all of which may be counted as intrastate. Some part of the 1,910,732 tons shipped in from other States was doubtless Kentucky coal consigned to points south of the river and is also intrastate. It is clear, however, that the great bulk of the rail shipments consigned to the Cincinnati district are interstate.
c/ The Chicago district extends across the State line into Indiana. The total quantities shipped into the district as a whole are known accurately, but not the quantities moving into the Indiana as opposed to the Illinois portion. In order to complete the picture of intrastate and interstate movement, a rough apportionment has been made of the tonnages originating in these two States, based on known consumption. Shipments originating outside the two States of Illinois and Indiana are obviously interstate.

By E. G. Tryon and W. S. Young,
Coal Economics Division,
U. S. Bureau of Mines.
October 22, 1935.

HOW INTRASTATE RAIL SHIPMENTS OF BITUMINOUS COAL TO INDIANAPOLIS MEET COMPETITION FROM INTERSTATE RAIL SHIPMENTS (1929 data)

(Indianapolis is fairly representative of other cities in the large coal-producing States of Illinois, Indiana, and Ohio, where much of the local output is consumed INTRAstate. In 1929 the city received 52.9 percent of its all-rail coal deliveries INTRAstate from Indiana mines and 47.1 percent INTERstate from mines in 25 districts in 8 other States. The sources are shown in detail below.

The supplies of a number of other cities are summarized in the succeeding table. Source: Records of Ohio Bureau of Coal Statistics and Illinois Freight Association.)

Destination city	Origin fields	Net tons shipped in by rail during 1929		
		INTRAstate	INTERstate	Total
INDIANAPOLIS, Indiana	In same State			
	All Indiana fields	1,811,688	———	1,811,688
	In other States			
	Big Sandy — Ky.	———	24,222	1,612,377
	Kanawha-Logan — W. Va.	———	732,111	
	Kenova-Thacker — W. Va.-Ky.	———	95,288	
	McRoberts — Ky.	———	17,025	
	Hazard — Ky.	———	79,831	
	Harlan — Ky.	———	32,810	
	Southern Appalachian — Ky.-Tenn.-Va.	———	1,288	
	Southwest Virginia — Va.	———	37,183	
	Ex-river coal — W. Va.-Ky.	———	145,240	
	Cumberland-Piedmont — Md.-W. Va.	———	153	
	New River — W. Va.	———	39,360	
	Winding Gulf — W. Va.	———	52,363	
	Pocahontas — W. Va.-Va.	———	300,111	
	Tug River — W. Va.	———	42,708	
	Fairmont — W. Va.	———	8,036	
	Western Pennsylvania — Pa.	———	837	
	Ohio (six fields) — Ohio	———	1,261	
	Southern (two fields) — Ill.	———	2,091	
	Western Kentucky — Ky.	———	459	
	Total Tons	1,811,688	1,612,377	3,424,065
	Percent	52.9%	47.1%	100.0%

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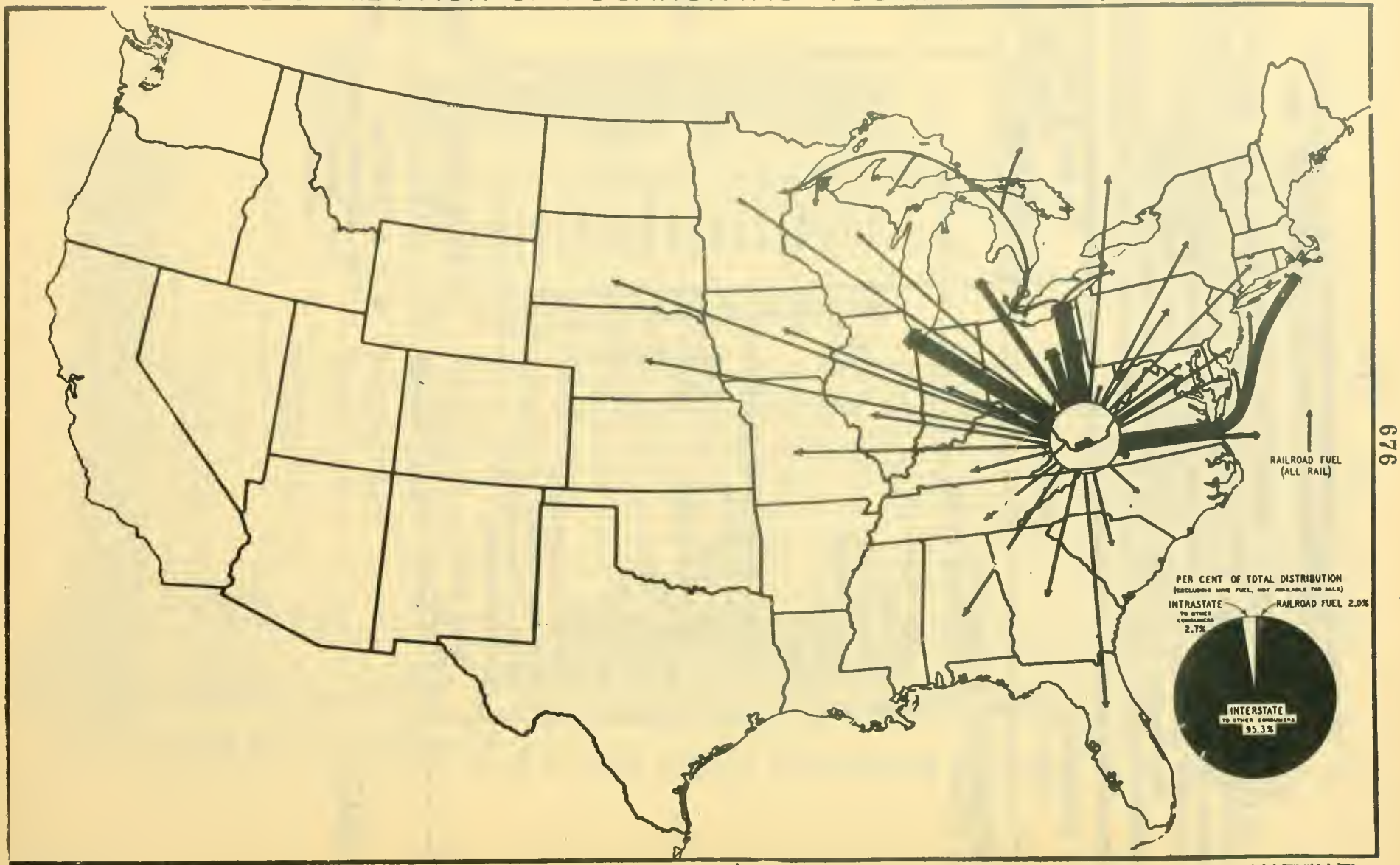
By F. G. Tryon and W. H. Young,
Coal Economics Division,
U. S. Bureau of Mines,
October 22, 1935.

DISTRIBUTION OF POCAHONTAS-TUG RIVER COAL, 1929



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APPENDIX TO

CHAPTER V.

COST TABLES

ECONOMIC SURVEY

OF THE

BITUMINOUS COAL INDUSTRY

Bituminous Coal — Cost Table 1. — Average Costs of Divisions I a/ and II b/ combined, including deep and strip mines, by months, November 1933 through January 1935.

	(Average Costs per Ton) 1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Total Average Cost	5 Mos. Total % of Total Cost	8 Mos. Composite c/ April - Nov. '34	1934 Dec.	1935 Jan.	10 Mos. Total Apr. '34-Jan. '35 Average Cost	% of Total Cost
Mine Labor	$ .8968	$ .9043	$ .8972	$ .8915	$ .8901	$ .8956	58.1	$ 1.0925	$1.0693	$1.0629	$ 1.0864	59.3
Mine Supplies	.2301	.2379	.2182	.2196	.2145	.2235	14.5	.2676	.2661	.2466	.2650	14.4
Miscellaneous & Fixed Charges	.2808	.2866	.2733	.2761	.2608	.2748	17.8	.3086	.2974	.2762	.3036	16.6
Production Cost	1.4077	1.4288	1.3887	1.3872	1.3654	1.3939	90.4	1.6687	1.6328	1.5857	1.6550	90.3
Selling & Administration	.1427	.1560	.1497	.1539	.1436	.1489	9.6	.1778	.1880	.1676	.1777	9.7
Total Cost	1.5504	1.5848	1.5384	1.5411	1.5090	1.5428	100.0	1.8465	1.8208	1.7533	1.8327	100.0
Average No. of Days Worked	16.8	16.1	17.8	17.8	20.4	88.9		121.7	16.2	18.2	156.1	
No. of Mines Reporting	1053	1050	1006	992	1039	• 1033		• 934	969	993	• 942	
Production (000 omitted) Tons	19,535	18,487	19,901	19,798	23,798	101,519		134,522	18,244	20,698	173,464	

• A simple average of the total number of mines reporting for the several months.
a/ Excluding Western Kentucky for all months in order to have comparable data. Panhandle did not report for March 1934.
b/ Excluding Iowa in order to have comparable data. Available for Nov. & Dec. '33 only.
c/ So. Sub. No. 1 & 2 reported April to Nov. 1934 as 8-month Totals. These months not separately available.

Bituminous Coal — Cost Table 2. — Average Costs of Divisions I a/ and II b/ combined, deep mines only, by months, November 1933 through January 1935.

Mine Labor	.9231	.9337	.9260	.9193	.9165	.9233	59.0	1.1218	1.1091	1.0977	1.1177	60.2
Mine Supplies	.2276	.2359	.2185	.2180	.2123	.2215	14.1	.2641	.2620	.2424	.2613	14.0
Miscellaneous & Fixed Charges	.2780	.2849	.2716	.2745	.2583	.2727	17.4	.3073	.2987	.2745	.3025	16.3
Production Cost	1.4287	1.4545	1.4141	1.4118	1.3871	1.4175	90.5	1.6932	1.6698	1.6146	1.6815	90.5
Selling & Administration	.1418	.1554	.1486	.1541	.1435	.1484	9.5	.1769	.1883	.1676	.1769	9.5
Total Cost	1.5705	1.6099	1.5627	1.5659	1.5306	1.5659	100.0	1.8701	1.8581	1.7822	1.8584	100.0
Average No. of Days Worked	16.9	16.1	17.9	17.9	20.6	89.4		121.0	16.0	18.1	155.1	
No. of Mines Reporting	1018	1018	972	980	1005	• 999		• 904	937	960	• 910	
Production (000 omitted) Tons	18,622	17,538	18,896	18,837	22,717	96,610		128,518	17,197	19,629	165,344	

• A simple average of the total number of mines reporting for the several months.
a/ Excluding Western Kentucky for all months in order to have comparable data. Panhandle did not report for March 1934.
b/ Excluding Iowa in order to have comparable data. Available for Nov. & Dec. '33 only.
c/ So. Sub. No. 1 & 2 reported April to Nov. 1934 as 8-month Totals. These months not separately available.

Bituminous Coal — Cost Table 3. — Average Costs of Division I, by months, November 1933 through January 1935.

Mine Labor	.9411	.9551	.9460	.9383	.9359	b/.9427	58.96	a/1.1503	1.1668	1.1501	1.1519	60.44
Mine Supplies	.2195	.2330	.2123	.2146	.2079	.2168	13.56	a/ .2587	.2645	.2428	.2575	13.51
Miscellaneous & Fixed Charges	.2913	.3053	.2883	.2887	.2685	.2872	17.96	a/ .3193	.3247	.2946	.3171	16.64
Production Cost	1.4519	1.4934	1.4466	1.4416	1.4123	1.4467	90.48	a/1.7283	1.7560	1.6875	1.7265	90.59
Selling & Administration	.1441	.1605	.1536	.1588	.1460	.1522	9.52	a/ .1772	.2004	.1769	.1793	9.41
Total Cost	1.5960	1.6539	1.6002	1.6004	1.5583	1.5989	100.00	a/1.9055	1.9564	1.8644	1.9058	100.00
Average No. of Days Worked	17.1	15.9	17.9	18.3	21.3	90.9		a/ 125.7	15.2	17.5	157.8	
No. of Mines Reporting	892	872	825	828	878	• 863		a/ 788	800	818	• 793	
Production (000 omitted) Tons	15,393	14,030	15,180	15,429	19,040	b/ 79,072		109,781a/	13,207	15,321	138,309	

• A simple average of the total number of mines reported for the several months.
a/ 8-month total including April through Nov. '34. Southern Subdivisions Nos. 1 and 2 are not separately available for these months, which necessitates showing the entire Division on the same basis on this Table. See tables. Subdivisional tables for monthly averages.
b/ Excluding Western Kentucky for the sake of comparability as it reported for Nov., Dec. 1933 and Jan. 1934, only. Also excluding Panhandle for March, 1934.

Bituminous Coal — Cost Table 4.

Average costs of Division I - North 1/, by months, November 1933 through January 1935.

(Average Costs per Ton)

	1933 Nov.	1933 Dec.	1934 Jan.	1934 Feb.	1934 March	5 Mos. Total Average Cost	5 Mos. Total % of Total Cost	1934 April	1934 May	1934 June	1934 July	1934 August	1934 Sept.	1934 October	1934 Nov.	1934 Dec.	1935 Jan.	10 Mos. Total Apr. '34–Jan. '35 Average Cost	10 Mos. Total Apr. '34–Jan. '35 % of Total Cost
Mine Labor	$ .9692	$ .9799	$ .9816	$ .9737	$ .9659	$ .9735 a/	60.74	$1.2337	$1.1660	$1.1713	$1.1801	$1.1797	$1.2042	$1.1807	$1.1874	$1.1917	$1.1754	$1.1858	61.46
Mine Supplies	.2157	.2282	.2160	.2170	.2039	.2155	13.44	.2985	.2536	.2516	.2569	.2569	.2761	.2466	.2674	.2622	.2429	.2601	13.48
Miscellaneous & Fixed Charges	.2818	.2926	.2864	.2875	.2672	.2822	17.61	.3497	.3184	.3255	.3275	.3182	.3403	.3131	.3151	.3176	.2993	.3212	16.64
Production Cost	1.4667	1.5007	1.4840	1.4782	1.4370	1.4712	91.79	1.8822	1.7380	1.7484	1.7645	1.7548	1.8206	1.7404	1.7699	1.7715	1.7176	1.7671	91.58
Selling & Administration	.1195	.1405	.1373	.1372	.1259	.1316	8.21	.1590	.1529	.1581	.1626	.1554	.1745	.1584	.1654	.1809	.1585	.1625	8.42
Total Cost	1.5862	1.6412	1.6213	1.6154	1.5629	1.6028	100.00	2.0412	1.8909	1.9065	1.9271	1.9102	1.9951	1.8988	1.9353	1.9524	1.8761	1.9296	100.00
Average No. of Days Worked	17.7	16.8	18.0	18.3	21.3	90.9		13.9	15.8	14.9	14.7	15.1	13.6	16.3	15.6	15.1	17.3		
No. of Mines Reporting	428	441	411	421	448	• 433		402	398	396	376	399	403	427	421	417	433		
Production (000 omitted) Tons	8,143	7,552	7,528	7,837	9,877	40,937 a/		5,565	6,716	6,401	6,228	6,915	6,153	7,730	7,233	6,895	8,020		

	10 Mos. Total Apr. '34–Jan. '35
Average No. of Days Worked	151.9
No. of Mines Reporting	• 408
Production (000 omitted) Tons	67,856

• A simple average of the total number of mines reported for the several months.

1/ Division I - North includes: Eastern Sub. (excl. Md. & Upper Pot.), Western Penna., Ohio, Michigan, Panhandle, No. West Virginia

a/ Excluding Panhandle for March, 1934.

Bituminous Coal — Cost Table 5.

Average Costs of Division I - South 1/, by months, November 1933 through January 1935.

(Average Costs per Ton)

	1933 Nov.	1933 Dec.	1934 Jan.	1934 Feb.	1934 March	5 Mos. Total Average Cost	5 Mos. Total % of Total Cost	5 Mos. Composite April – Nov. '34	1934 Dec.	1935 Jan.	10 Mos. Total Apr. '34–Jan. '35 Average Cost	10 Mos. Total Apr. '34–Jan. '35 % of Total Cost
Mine Labor	$ .9094	$ .9262	$ .9110	$ .9017	$ .9035	$ b/ .9096	57.04	a/ $ 1.1163	$1.1396	$1.1223	$1.1191	59.44
Mine Supplies	.2238	.2385	.2089	.2122	.2122	.2181	13.68	a/ .2553	.2671	.2426	.2550	13.54
Miscellaneous & Fixed Charges	.3020	.3201	.2903	.2899	.2700	.2927	18.35	a/ .3140	.3323	.2895	.3132	16.63
Production Cost	1.4352	1.4848	1.4098	1.4038	1.3857	1.4204	89.07	a/ 1.6858	1.7390	1.6544	1.6873	89.61
Selling & Administration	.1717	.1840	.1696	.1811	.1676	.1743	10.93	a/ .1925	.2218	.1971	.1956	10.39
Total Cost	1.6069	1.6688	1.5794	1.5849	1.5533	1.5947	100.00	a/ 1.8783	1.9608	1.8515	1.8829	100.00
Average No. of Days Worked	16.4	14.9	17.6	18.4	21.3	90.9		130.8 a/	15.3	17.7	163.8	
No. of Mines Reporting	464	431	414	407	430	• 430		383 a/	383	385	• 385	
Production (000 omitted) Tons	7,250	6,478	7,652	7,592	9,163	38,135 b/		56,840 a/	6,312	7,301	70,453	

• A simple average of the total number of mines reported for the several months.

1/ Division I - South includes: Southern No. 1, Southern No. 2, Maryland, Upper Potomac, West Virginia. (Western Kentucky reported only for November, Dec. 1933 and January 1934; for sake of comparability was not included in these summaries; with Western Kentucky included, the averages would be as follows:

	November	December	January
Mine Labor	.8996	.9106	.8989
Mine Supplies	.2220	.2342	.2058
Miscellaneous & Fixed Charges	.2945	.3096	.2826
Production Cost	1.4161	1.4544	1.3873
Selling & Administration	.1703	.1819	.1680
Total Cost	1.5864	1.6363	1.5553

a/ 8-Month total including April through November 1934. Southern Subdivisions Nos. 1 and 2 are not separately available for these months, which necessitates showing the entire Division on the same basis on this Table. See tables. Subdivisional Tables for monthly averages.

b/ Excluding Western Kentucky for the sake of comparability as it reported for November, December, 1933 and January 1934, only. Also excluding Panhandle for March, 1934.

Bituminous Coal — Cost Table 6

Average costs of Eastern subdivision of Division I, by months, November 1933 through January 1935.

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Total Average Cost	% of Total Cost	1934 April	May	June	July	August	Sept.	October	Nov.	1934 Dec.	1935 Jan.	10 Mos. Total Apr. '34–Jan. '35 Average Cost	% of Total Cost
Mine Labor	$1.0659	$1.0789	$1.0725	$1.0752	$1.0575	$1.0695	61.72	$1.3137	$1.2943	$1.3055	$1.2996	$1.2931	$1.3076	$1.2836	$1.2951	$1.2964	$1.2873	$1.2968	61.22
Mine Supplies	.2577	.2751	.2471	.2552	.2415	.2542	14.67	.3441	.3175	.3361	.3239	.3135	.3297	.2922	.3095	.3192	.2839	.3148	14.86
Miscellaneous & Fixed Charges	.2640	.2764	.2584	.2688	.2448	.2648	15.28	.3310	.3303	.3473	.3454	.3309	.3393	.2980	.3122	.3087	.2750	.3190	15.06
Production Cost	1.6076	1.6304	1.5783	1.5992	1.5438	1.5885	91.67	1.9885	1.9421	1.9879	1.9689	1.9375	1.9766	1.8738	1.9168	1.9243	1.8462	1.9306	91.14
Selling & Administration	.1440	.1561	.1460	.1491	.1305	.1443	8.33	.1836	.1782	.1925	.1992	.1880	.2018	.1853	.1885	.1936	.1722	.1876	8.86
Total Cost	1.7516	1.7865	1.7243	1.7483	1.6743	1.7328	100.00	2.1724	2.1203	2.1804	2.1681	2.1255	2.1784	2.0591	2.1053	2.1179	2.0184	2.1182	100.00
Average No. of Days Worked	16.4	17.1	19.0	18.1	20.9	91.0		14.4	14.1	13.0	13.7	14.4	13.4	16.9	16.3	16.5	18.5	151.2	
No. of Mines Reporting	164	175	186	175	182	177*		156	160	150	148	151	150	160	161	159	166	156*	
Production,(000 omitted) Tons	2,188	2,302	2,622	2,550	3,118	12,780		1,817	1,891	1,732	1,792	1,943	1,785	2,334	2,177	2,234	2,544	20,249	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal — Cost Table 7

Average Costs of Barnesboro area of Eastern subdivision,(Division I) by months, November 1933 through January 1935.

Mine Labor	$1.1055	$1.1378	$1.1099	$1.0768	$1.0746	$1.0973	57.72	$1.3517	$1.3426	$1.2770	$1.2402	$1.2343	$1.2722	$1.2548	$1.3032	$1.2746	$1.2581	$1.2774	58.64
Mine Supplies	.3022	.3468	.2986	.2800	.2956	.3022	15.90	.3587	.3782	.3352	.2914	.3165	.3354	.2961	.3462	.3129	.3065	.3247	14.90
Miscellaneous & Fixed Charges	.3827	.3298	.3206	.3248	.2994	.3287	17.29	.3997	.4416	.4355	.4014	.4254	.4290	.3351	.3549	.3546	.3153	.3827	17.57
Production Cost	1.7904	1.8144	1.7291	1.6816	1.6696	1.7282	90.91	2.1101	2.1624	2.0477	1.9330	1.9782	2.0366	1.8860	2.0043	1.9421	1.8799	1.9848	91.11
Selling & Administration	.1879	.1892	.1701	.1679	.1575	.1727	9.09	.2227	.2232	.2053	.1900	.1969	.2155	.1808	.1810	.1844	.1669	.1937	8.89
Total Cost	1.9783	2.0036	1.8992	1.8495	1.8271	1.9009	100.00	2.3328	2.3856	2.2530	2.1230	2.1731	2.2521	2.0668	2.1853	2.1265	2.0468	2.1785	100.00
Average No. of Days Worked	14.5	14.2	15.4	16.1	18.3	78.5		13.5	12.4	13.5	16.2	14.8	13.1	17.1	16.4	17.3	19.4	153.7	
No. of Mines Reporting	21	20	21	23	24	20*		20	18	18	16	17	15	16	18	17	17	17*	
Production,(000 omitted) Tons	205	185	208	252	292	1,142		153	158	174	194	197	163	222	219	230	259	1,969	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal — Cost Table 8

Average Costs of Blacklick area of Eastern subdivision,(Division I) by months, November 1933 through January 1935.

Mine Labor	$1.2298	$1.1816	$1.1442	$1.1251	$1.1597a/	62.79	$1.3490	$1.4221	$1.3849	$1.3513	$1.3565	$1.4204	$1.3509	$1.2768	$1.2994	$1.3201	$1.3493		65.33
Mine Supplies	.2540	.2531	.2407	.2374	.2443a/	13.23	.2776	.3671	.3179	.3005	.2547	.3357	.2906	.2692	.2755	.2546	.2909		14.08
Miscellaneous & Fixed Charges	.2822	.3019	.2457	.2209	.2546a/	13.79	.2875	.3313	.3117	.2747	.2751	.2094	.2145	.1876	.2077	.2174	.2484		12.02
Production Cost	1.7660	1.7366	1.6306	1.5834	1.6586a/	89.81	1.9141	2.1205	2.0145	1.9265	1.8863	1.9655	1.8560	1.7336	1.7826	1.7921	1.8886		91.43
Selling & Administration	.2123	.1352	.2264	.1767	.1882a/	10.19	.2456	.1783	.2493	.1661	.1638	.1774	.1600	.1776	.1531	.1443	.1771		8.57
Total Cost	1.9783	1.8718	1.8570	1.7601	1.8468a/	100.00	2.1597	2.2988	2.2638	2.0926	2.0501	2.1429	2.0160	1.9112	1.9357	1.9364	2.0657		100.00
Average No. of Days Worked	13.3	16.7	17.6	22.0	69.6		14.2	12.0	12.6	15.4	15.0	11.8	16.0	16.2	18.3	18.8	150.3		
No. of Mines Reporting	4	3	4	4	4*		4	4	4	4	4	4	4	4	5	4	4*		
Production,(000 omitted) Tons	40	47	64	81	232a/		42	43	47	57	56	44	60	40	72	69	530		

a/ 4-month total. November data insufficient to be shown
* A simple average of the total number of mines reported for the several months

Bituminous Coal — Cost Table 9 — Average Costs of Broadtop area of Eastern subdivision,(Division I) by months, November 1933 through January 1935.

(Average Costs per ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Total Average Cost	5 Mos. Total % of Total Cost	1934 April	May	June	July	August	Sept.	October	Nov.	1934 Dec.	1935 Jan.	10 Mos. Total Apr. '34-Jan. '35 Average Cost	10 Mos. Total Apr. '34-Jan. '35 % of Total Cost
Mine Labor	$1.3589	$1.3665	$1.3582	$1.3675	$1.3228	$1.3535	61.30	$1.5663	$1.6068	$1.5889	$1.5861	$1.6369	$1.6538	$1.6099	$1.5960	$1.5936	$1.5703	$1.5982	61.36
Mine Supplies	.4322	.3683	.4186	.4171	.3375	.3918	17.75	.4627	.4832	.5229	.4738	.4810	.5282	.4430	.4237	.4826	.4357	.4697	18.03
Miscellaneous & Fixed Charges	.3627	.3079	.2941	.2927	.2787	.3039	13.76	.3127	.3438	.3656	.3501	.3458	.3949	.3363	.3283	.3126	.3022	.3353	12.87
Production Cost	2.1538	2.0427	2.0709	2.0773	1.9390	2.0492	92.81	2.3417	2.4338	2.4774	2.4100	2.4637	2.5769	2.3892	2.3480	2.3888	2.3082	2.4032	92.26
Selling & Administration	.1934	.1653	.1385	.1686	.1390	.1587	7.19	.1937	.1769	.2008	.2326	.1902	.2130	.2088	.2104	.1921	.2027	.2017	7.74
Total Cost	2.3472	2.2080	2.2094	2.2459	2.0780	2.2079	100.00	2.5354	2.6107	2.6782	2.6426	2.6539	2.7899	2.5980	2.5584	2.5809	2.5109	2.6049	100.00
Average No. of Days Worked	13.4	20.3	20.6	19.3	21.1	94.7		17.6	16.2	14.0	14.9	14.5	11.9	16.1	17.8	20.0	21.6	164.6	
No. of Mines Reporting	7	5	6	6	6	6*		6	6	6	6	6	6	6	7	6	6	6*	
Production,(000 omitted)Tons	46	56	60	59	68	289		52	44	42	42	45	37	50	55	57	64	488	

* A simple average of the total number of mines reporting for the several months.

Bituminous Coal — Cost Table 10 — Average Costs of Clearfield area of Eastern subdivision, (Division I) by months, November 1933 through January 1935.

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Total Average Cost	5 Mos. Total % of Total Cost	1934 April	May	June	July	August	Sept.	October	Nov.	1934 Dec.	1935 Jan.	10 Mos. Total Apr. '34-Jan. '35 Average Cost	10 Mos. Total Apr. '34-Jan. '35 % of Total Cost
Mine Labor	$1.0950	$1.0822	$1.0729	$1.0749	$1.0583	$1.0751	63.23	$1.3112	$1.3389	$1.3496	$1.3052	$1.3025	$1.3245	$1.3195	$1.2931	$1.2756	$1.2557	$1.3029	62.95
Mine Supplies	.2426	.2221	.2183	.2279	.2094	.2226	13.09	.3630	.3172	.2840	.2618	.2722	.2855	.2910	.2672	.2872	.2349	.2833	13.69
Miscellaneous & Fixed Charges	.2535	.2398	.2463	.2531	.2381	.2456	14.44	.3159	.3300	.3189	.3019	.2891	.2962	.2811	.2756	.2604	.2427	.2864	13.84
Production Cost	1.5911	1.5441	1.5375	1.5559	1.5058	1.5433	90.76	1.9901	1.9861	1.9525	1.8689	1.8638	1.9062	1.8916	1.8359	1.8232	1.7333	1.8726	90.48
Selling & Administration	.1739	.1564	.1539	.1651	.1426	.1570	9.24	.1985	.2151	.2141	.1915	.1950	.2133	.1904	.1733	.2064	.1879	.1970	9.52
Total Cost	1.7650	1.7005	1.6914	1.7210	1.6484	1.7003	100.00	2.1886	2.2012	2.1666	2.0604	2.0588	2.1195	2.0820	2.0092	2.0296	1.9212	2.0696	100.00
Average No. of Days Worked	13.2	14.8	17.3	17.2	20.0	82.5		12.2	10.3	11.6	13.4	14.1	12.7	14.8	15.4	16.7	19.1	140.3	
No. of Mines Reporting	21	24	21	21	21	22*		19	19	17	14	14	16	20	19	18	18	17*	
Production,(000 omitted) Tons	129	154	157	159	197	796		104	90	90	97	104	97	127	132	136	161	1,138	

* A simple average of the total number of mines reporting for the several months.

Bituminous Coal — Cost Table 11 — Average Costs of Nanty-Glo area of Eastern subdivision, (Division I) by months, November 1933 through January 1935.

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Total Average Cost	5 Mos. Total % of Total Cost	1934 April	May	June	July	August	Sept.	October	Nov.	1934 Dec.	1935 Jan.	10 Mos. Total Apr. '34-Jan. '35 Average Cost	10 Mos. Total Apr. '34-Jan. '35 % of Total Cost
Mine Labor	$1.0991	$1.1008	$1.0911	$1.1190	$1.0870	$1.0986	61.46	$1.3905	$1.3718	$1.3398	$1.3234	$1.3045	$1.3238	$1.2762	$1.3144	$1.3155	$1.3016	$1.3220	62.86
Mine Supplies	.2615	.2665	.2477	.2678	.2407	.2561	14.33	.3798	.3178	.3151	.2967	.3085	.3070	.2750	.2969	.3014	.2851	.3052	14.51
Miscellaneous & Fixed Charges	.2575	.2393	.2411	.2634	.2333	.2460	13.76	.3384	.3247	.3123	.2944	.2846	.2991	.2610	.2785	.2646	.2225	.2836	13.49
Production Cost	1.6181	1.6066	1.5799	1.6502	1.5610	1.6007	89.55	2.1087	2.0143	1.9672	1.9145	1.8976	1.9299	1.8122	1.8898	1.8815	1.8092	1.9108	90.86
Selling & Administration	.1891	.1880	.1775	.1990	.1826	.1868	10.45	.1821	.1794	.2095	.1890	.1912	.2001	.2027	.1720	.1947	.1975	.1922	9.14
Total Cost	1.8072	1.7946	1.7574	1.8492	1.7436	1.7875	100.00	2.2908	2.1937	2.1767	2.1035	2.0888	2.1300	2.0149	2.0618	2.0762	2.0067	2.1030	100.00
Average No. of Days Worked	18.8	21.4	21.4	18.6	21.6	101.8		13.2	14.2	14.7	15.9	17.4	14.6	18.7	17.0	17.6	19.3	162.6	
No. of Mines Reporting	7	7	7	7	7	7*		7	6	6	7	6	7	7	7	7	7	7*	
Production,(000 omitted) Tons	251	275	285	248	310	1,369		182	195	208	226	247	216	281	252	258	285	2,350	

* A simple average of the total number of mines reporting for the several months.

Bituminous Coal — Cost Table 12 — Average Costs of Reynoldsville area of Eastern subdivision, (Division I) by months, November 1933 through January 1935.

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Total Average Cost	5 Mos. Total % of Total Cost	1934 April	May	June	July	August	Sept.	October	Nov.	1934 Dec.	1935 Jan.	10 Mos. Total Apr. '34–Jan. '35 Average Cost	10 Mos. Total Apr. '34–Jan. '35 % of Total Cost
Mine Labor	$ .9954	$ .9988	$ .9889	$1.0045	$ .9772	$ .9920	63.86	$1.2023	$1.1736	$1.1832	$1.1580	$1.1687	$1.1704	$1.1783	$1.2291	$1.2141	$1.2221	$1.1899	61.98
Mine Supplies	.2164	.2574	.2235	.2409	.2202	.2299	14.80	.3174	.2642	.3218	.2950	.2943	.3036	.2639	.2986	.3720	.2704	.2971	15.47
Miscellaneous & Fixed Charges	.2281	.2671	.2082	.2237	.1995	.2231	14.35	.2819	.2606	.2797	.2802	.2764	.2814	.2543	.2922	.3232	.2669	.2781	14.48
Production Cost	1.4399	1.5233	1.4206	1.4691	1.3969	1.4450	93.01	1.8016	1.6984	1.7847	1.7332	1.7394	1.7554	1.6965	1.8199	1.9093	1.7594	1.7651	91.93
Selling & Administration	.0978	.1336	.1100	.1134	.0967	.1085	6.99	.1296	.1276	.1400	.1701	.1545	.1537	.1592	.1905	.1834	.1446	.1549	8.07
Total Cost	1.5377	1.6569	1.5306	1.5825	1.4936	1.5535	100.00	1.9312	1.8260	1.9247	1.9033	1.8939	1.9091	1.8557	2.0104	2.0927	1.9040	1.9200	100.00
Average No. of Days Worked	18.2	15.3	17.7	17.9	21.6	90.7		15.5	16.4	13.9	13.9	13.9	13.6	17.5	15.1	12.5	15.8	148.1	
No. of Mines Reporting	33	33	27	28	29	30*		21	27	25	21	22	23	23	23	22	28	24*	
Production, (000 omitted) Tons	736	536	597	616	798	3,283		448	575	475	467	486	476	615	522	425	557	5,046	

* A simple average of the total number of mines reporting for the several months

Bituminous Coal — Cost Table 13 — Average Costs of Southfork area of Eastern subdivision, (Division I) by months, November 1933 through January 1935.

Mine Labor	$1.0703	$1.0775	$1.0844	$1.0872	$1.0841	$1.0815	62.06	$1.3548	$1.3532	$1.3876	$1.3966	$1.3616	$1.3779	$1.3617	$1.3133	$1.3243	$1.3240	$1.3514	61.18
Mine Supplies	.2773	.2921	.2482	.2508	.2422	.2599	14.91	.3517	.3445	.3557	.3694	.3157	.3388	.3070	.3092	.3143	.2860	.3253	14.73
Miscellaneous & Fixed Charges	.3175	.2657	.2599	.2695	.2504	.2693	15.46	.3362	.3562	.3761	.3991	.3435	.3661	.3324	.3278	.3047	.2910	.3379	15.30
Production Cost	1.6651	1.6353	1.5925	1.6075	1.5767	1.6107	92.43	2.0427	2.0539	2.1194	2.1651	2.0208	2.0828	2.0011	1.9503	1.9433	1.9010	2.0146	91.21
Selling & Administration	.1500	.1360	.1373	.1293	.1143	.1319	7.57	.1964	.1976	.2236	.2180	.1999	.2163	.1822	.1771	.1839	.1732	.1940	8.79
Total Cost	1.8151	1.7713	1.7298	1.7368	1.6910	1.7426	100.00	2.2391	2.2515	2.3430	2.3831	2.2207	2.2991	2.1833	2.1274	2.1272	2.0742	2.2086	100.00
Average No. of Days Worked	15.4	18.0	20.4	18.9	20.9	93.6		13.8	13.1	11.5	11.9	13.9	13.1	15.2	16.4	17.2	18.7	144.8	
No. of Mines Reporting	39	43	45	46	46	44*		43	41	37	36	41	41	45	43	44	46	42*	
Production, (000 omitted) Tons	523	648	753	715	828	3,467		501	458	403	392	472	449	554	562	635	687	5,113	

* A simple average of the total number of mines reporting for the several months.

Bituminous Coal — Cost Table 14 — Average Costs of Southern Somerset area of Eastern subdivision, (Division I) by months, November 1933 through January 1935.

Mine Labor	$1.0911	$1.0482	$1.0660	$1.0670	$1.0447	$1.0603	57.55	$1.2712	$1.2638	$1.3067	$1.3781	$1.3744	$1.3772	$1.2944	$1.2872	$1.2933	$1.2694	$1.3072	57.36
Mine Supplies	.3173	.2884	.2729	.2771	.2686	.2801	15.21	.3452	.3424	.3618	.4081	.3970	.4242	.3420	.3563	.3139	.3134	.3565	15.64
Miscellaneous & Fixed Charges	.3649	.3655	.3286	.3347	.3102	.3354	18.21	.3806	.3879	.4276	.4530	.4675	.4523	.3783	.3669	.3863	.3155	.3963	17.39
Production Cost	1.7733	1.7021	1.6675	1.6788	1.6235	1.6758	90.97	1.9930	1.9941	2.0961	2.2392	2.2389	2.2537	2.0147	2.0104	1.9935	1.8983	2.0600	90.39
Selling & Administration	.1561	.1737	.1692	.1789	.1527	.1663	9.03	.2001	.1997	.1886	.2441	.2264	.2544	.2318	.2283	.2384	.1899	.2191	9.61
Total Cost	1.9294	1.8758	1.8367	1.8577	1.7762	1.8421	100.00	2.1951	2.1938	2.2847	2.4833	2.4653	2.5081	2.2465	2.2387	2.2319	2.0882	2.2791	100.00
Average No. of Days Worked	15.1	18.8	19.6	18.7	21.6	93.8		17.0	16.3	15.6	13.5	14.3	13.7	19.8	18.5	20.1	21.0	169.8	
No. of Mines Reporting	11	16	28	22	23	20*		18	19	17	21	19	18	18	17	18	18	18*	
Production, (000 omitted) Tons	142	229	312	287	347	1,317		238	228	204	197	200	192	265	234	250	283	2,291	

* A simple average of the total number of mines reporting for the several months.

Bituminous Coal — Cost Table 15 — Average Costs of Maryland area of Eastern subdivision, (Division I) by months, November 1933 through January 1935.

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Total Avarage Cost	% of Total Cost	1934 April	May	June	July	August	Sept.	October	Nov.	1934 Dec.	1935 Jan.	10 Mos. Total Apr. '34-Jan. '35 Average Cost	% of Total Cost
Mine Labor	$1.1514	$1.1296	$1.1199	$1.1116	$1.0941	$1.1205	64.22	$1.3934	$1.3569	$1.4013	$1.3648	$1.3497	$1.3335	$1.3092	$1.3102	$1.3122	$1.2997	$1.3338	63.19
Mine Supplies	.2289	.2046	.1873	.1941	.1881	.1994	11.43	.2694	.2614	.2558	.2627	.2485	.2300	.2417	.2520	.2166	.2205	.2417	11.45
Miscellaneous & Fixed Charges	.2826	.2491	.2394	.2560	.2367	.2511	14.40	.3799	.3377	.4106	.3752	.3527	.3457	.3053	.3570	.2916	.2631	.3314	15.70
Production Cost	1.6629	1.5833	1.5466	1.5617	1.5189	1.5710	90.05	2.0427	1.9560	2.0677	2.0027	1.9509	1.9092	1.8562	1.9192	1.8204	1.7833	1.9069	90.34
Selling & Administration	.1759	.1771	.1937	.1767	.1430	.1737	9.95	.2261	.2284	.2025	.2221	.1986	.2153	.1936	.2084	.1984	.1781	.2038	9.66
Total Cost	1.8388	1.7604	1.7403	1.7384	1.6619	1.7447	100.00	2.2688	2.1844	2.2702	2.2248	2.1495	2.1245	2.0498	2.1276	2.0188	1.9614	2.1107	100.00
Average No. of Days Worked	16.3	20.2	20.6	18.9	21.2	97.2		12.0	9.7	7.9	11.0	11.2	12.4	15.3	16.0	18.9	19.9	134.3	
No. of Mines Reporting	14	16	16	12	11	14*		10	10	12	13	13	12	12	13	13	12	12*	
Production, (000 omitted) Tons	93	124	130	101	116	564		48	48	46	64	64	65	87	89	103	106	720	

* A simple average of the total number of mines reporting for the several months

Bituminous Coal — Cost Table 16 — Average Costs of Upper Potomac area of Eastern subdivision, (Division I) by months, November 1933 through January 1935.

Mine Labor	$1.1352	$1.1699	$1.1022	$1.0921	$1.1126	$1.1218	64.90	$1.3412	$1.3016	$1.2718	$1.2856	$1.2516	$1.3463	$1.2859	$1.3300	$1.3290	$1.3288	$1.3066	64.84
Mine Supplies	.2285	.2202	.1889	.2156	.2158	.2131	12.33	.2883	.2426	.2841	.2607	.2622	.2768	.2513	.2553	.2693	.2617	.2637	13.09
Miscellaneous & Fixed Charges	.2689	.2594	.2443	.2603	.2255	.2495	14.43	.2821	.2836	.2708	.2580	.2080	.2420	.2097	.2135	.2083	.2111	.2336	11.59
Production Cost	1.6326	1.6495	1 5354	1.5680	1.5539	1.5844	91.66	1.9116	1.8278	1.8267	1.8043	1.7218	1.8651	1.7469	1.7988	1.8066	1.8016	1.8039	89.52
Selling & Administration	.1391	.1677	.1504	.1290	.1353	.1442	8.34	.2132	.2222	.2362	.2189	.1896	.2662	.1913	.2070	.2192	.1836	.2112	10.48
Total Cost	1.7717	1.8172	1.6858	1.6970	1.6892	1.7286	100.00	2.1248	2.0500	2.0629	2.0232	1.9114	2.1313	1.9382	2.0058	2.0258	1.9852	2.0151	100.00
Average No. of Days Worked	17.6	16.9	19.4	18.7	22.0	94.6		16.6	14.4	13.2	13.8	17.0	14.3	18.6	17.9	17.9	18.9	162.6	
No. of Mines Reporting	11	10	11	6	11	10*		8	10	8	10	9	8	9	10	9	10	9*	
Production, (000 omitted) Tons	63	57	71	49	81	321		48	52	43	57	70	47	75	71	67	73	603	

* A simple average of the total number of mines reporting for the several months.

Bituminous Coal — Cost Table 17. — Average Costs of Western Pennsylvania Subdivision of Division I, by months, November 1933 through January 1935.

(Average Costs per Ton)	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Total Average Cost	5 Mos. Total % of Total Cost	1934 April	May	June	July	August	Sept.	October	November	December	1935 January	10 Mos. Total Apr. '34–Jan. '35 Average Costs	10 Mos. Total Apr. '34–Jan. '35 % of Total Cost
Mine Labor	$ .9814	$1.0048	$ .9966	$ .9929	$ .9784	$ .9895	60.18	$1.2072	$1.1800	$1.1897	$1.2003	$1.1862	$1.2084	$1.1776	$1.1870	$1.1950	$1.1762	$ 1.1901	61.32
Mine Supplies	.2076	.2281	.2159	.2156	.1973	.2115	12.86	.2754	.2466	.2485	.2511	.2473	.2590	.2373	.2646	.2531	.2368	.2514	12.96
Miscellaneous & Fixed Charges	.3197	.3558	.3532	.3491	.3131	.3354	20.40	.3757	.3624	.3709	.3683	.3608	.3794	.3619	.3615	.3734	.3578	.3668	18.89
Production Cost	1.5087	1.5887	1.5657	1.5576	1.4888	1.5364	93.44	1.8583	1.7890	1.8091	1.8197	1.7943	1.8468	1.7768	1.8131	1.8215	1.7708	1.8083	93.17
Selling & Administration	.0956	.1150	.1158	.1128	.1047	.1079	6.56	.1298	.1181	.1280	.1340	.1281	.1393	.1263	.1357	.1556	.1331	.1325	6.83
Total Cost	1.6043	1.7037	1.6815	1.6704	1.5935	1.6443	100.00	1.9881	1.9071	1.9371	1.9537	1.9224	1.9861	1.9031	1.9488	1.9771	1.9039	1.9408	100.00
Average No. of Days Worked	19.4	16.9	17.6	18.6	21.6	93.9		16.3	17.4	16.2	15.9	16.9	15.8	18.1	16.3	15.1	17.2	165.2	
No. of Mines Reporting	152	150	128	133	154	* 143		150	134	142	138	149	149	155	149	149	159	* 148	
Production (thousands of tons)	3,415	2,751	2,531	2,706	3,775	15,178		2,467	2,631	2,497	2,397	2,819	2,571	3,069	2,746	2,370	2,887	26,454	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal — Cost Table 18. — Average Costs of Districts 1 - 2 - 3, Thick Vein Area, of Western Pennsylvania Subdivision (Division I), by months, November 1933 through January 1935.

Mine Labor	.9535	.9753	.9837	.9892	.9586	.9703	60.14	1.1736	1.1570	1.1544	1.1698	1.1566	1.1666	1.1569	1.1824	1.1887	1.1693	1.1669	61.53
Mine Supplies	.1948	.2033	.1986	.1978	.1784	.1932	11.97	.2473	.2287	.2260	.2262	.2317	.2110	.2144	.2476	.2479	.2177	.2294	12.09
Miscellaneous & Fixed Charges	.3347	.3668	.3551	.3535	.3210	.3436	21.30	.3857	.3682	.3674	.3678	.3591	.3644	.3607	.3732	.3867	.3658	.3694	19.48
Production Cost	1.4830	1.5454	1.5374	1.5405	1.4580	1.5071	93.41	1.8066	1.7539	1.7478	1.7638	1.7474	1.7420	1.7320	1.8032	1.8233	1.7528	1.7657	93.10
Selling & Administration	.0943	.1163	.1149	.1111	.1004	.1063	6.59	.1262	.1123	.1293	.1336	.1270	.1378	.1256	.1370	.1543	.1319	.1309	6.90
Total Cost	1.5773	1.6617	1.6523	1.6516	1.5584	1.6134	100.00	1.9328	1.8662	1.8771	1.8974	1.8744	1.8798	1.8576	1.9402	1.9776	1.8847	1.8966	100.00
Average No. of Days Worked	18.8	17.6	17.8	18.1	21.4	93.7		17.0	18.0	16.6	16.4	17.7	17.1	19.0	16.2	15.2	17.3	170.5	
No. of Mines Reporting	36	30	33	33	44	* 34		38	35	37	37	38	36	37	38	39	40	* 37	
Production (thousands of tons)	1,065	862	901	893	1,312	5,033		882	957	918	873	963	893	1,037	882	781	888	9,074	

Bituminous Coal — Cost Table 19. — Average Costs of District 4, Avella, Thin Vein Area, of Western Pennsylvania Subdivision (Division I), by months, November 1933 through January 1935.

Mine Labor	.9440	.9339	.9623	.9603	1.0226	.9698	65.78	1.2663	1.3470	1.2810	1.2785	1.1940	1.3101	1.1954	1.2258	1.1032	1.1606	1.2199	66.01
Mine Supplies	.1622	.2255	.1493	.1679	.1991	.1806	12.25	.3478	.3296	.2520	.2293	.2329	.3191	.2467	.3039	.2051	.2717	.2723	14.74
Miscellaneous & Fixed Charges	.1985	.2197	.2129	.2324	.2140	.2154	14.61	.2262	.2271	.2396	.2354	.2200	.2993	.2351	.2578	.1771	.2145	.2348	12.71
Production Cost	1.3047	1.3791	1.3245	1.3606	1.4357	1.3658	92.64	1.8403	1.9037	1.7726	1.7432	1.6469	1.9357	1.6772	1.7875	1.4854	1.6468	1.7270	93.46
Selling & Administration	.1026	.1050	.0914	.1175	.1213	.1086	7.36	.1197	.1416	.1077	.1008	.1253	.1112	.1005	.1332	.1544	.1217	.1209	6.54
Total Cost	1.4073	1.4841	1.4159	1.4781	1.5570	1.4744	100.00	1.9600	2.0453	1.8803	1.8440	1.7722	2.0397	1.7777	1.9207	1.6398	1.7685	1.8479	100.00
Average No. of Days Worked	18.7	16.2	20.1	20.0	20.3	95.3		15.1	8.7	11.1	11.0	13.8	10.2	14.0	14.6	16.7	18.4	133.6	
No. of Mines Reporting	3	3	3	3	4	* 3		5	3	3	3	4	5	5	5	3	4	* 4	
Production (thousands of tons)	36	31	38	38	50	193		35	17	23	24	65	46	66	69	33	70	448	

Bituminous Coal — Cost Table 20. — Average Costs of District 5, Panhandle, Thin Vein Area, of Western Pennsylvania Subdivision (Division I), by months, November 1933 through January 1935.

Mine Labor	1.0075	1.0542	1.0342	1.0371	1.0198	1.0277	59.70	1.2708	1.2046	1.2282	1.2237	1.2052	1.2205	1.1901	1.2064	1.2056	1.1882	1.2115	61.02
Mine Supplies	.2144	.2648	.2314	.2406	.2194	.2315	13.44	.3194	.2635	.2748	.2785	.2530	.2809	.3558	.2897	.2530	.2466	.2695	13.57
Miscellaneous & Fixed Charges	.3192	.3769	.3926	.3770	.3240	.3510	20.40	.4155	.3736	.3979	.3734	.3717	.3935	.2772	.3727	.3554	.3688	.3789	19.08
Production Cost	1.5411	1.6959	1.6582	1.6547	1.5632	1.6102	93.54	2.0057	1.8417	1.9009	1.8756	1.8299	1.8949	1.8231	1.8688	1.8140	1.8036	1.8599	93.67
Selling & Administration	.0974	.1257	.1302	.1127	.1041	.1113	6.46	.1333	.1085	.1170	.1186	.1187	.1229	.1206	.1376	.1563	.1259	.1257	6.33
Total Cost	1.6385	1.8216	1.7884	1.7674	1.6673	1.7215	100.00	2.1390	1.9502	2.0179	1.9942	1.9486	2.0178	1.9437	2.0064	1.9703	1.9295	1.9856	100.00
Average No. of Days Worked	20.0	15.7	16.6	19.9	21.7	93.9		14.9	18.2	15.6	16.2	18.1	17.9	19.3	17.0	17.1	18.9	173.2	
No. of Mines Reporting	27	29	23	* 25	25	26		25	22	26	24	30	31	31	29	27	32	* 27	
Production (thousands of tons)	919	602	477	619	817	3,434		489	590	541	558	771	726	803	707	589	773	6,547	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal — Cost Table 21.

Average Costs of District 6, Youghiogheny, Thin Vein Area, of Western Pennsylvania Subdivision (Division I), by months, November 1933 through January 1935.

(Average Costs per Ton)

	1933 Nov.	1934 Dec.	1934 Jan.	1934 Feb.	1934 March	5 Mos. Total Average Cost	5 Mos. Total % of Total Cost	1934 April	1934 May	1934 June	1934 July	1934 August	1934 Sept.	1934 October	1934 November	1934 December	1935 January	10 Mos. Total Apr. '34-Jan. '35 Average Costs	10 Mos. Total Apr. '34-Jan. '35 % of Total Cost
Mine Labor	$ .9925	$ .9864	$ 1.0008	$ 1.0276	$1.0156	$1.0041	56.23	$1.2104	$1.1721	$1.1777	$1.1985	$1.1676	$1.2189	$1.1954	$1.2075	$1.2474	$1.2094	$1.1999	57.47
Mine Supplies	.1756	.2149	.2268	.2233	.2120	.2096	11.74	.2945	.2126	.2424	.2858	.2497	.3043	.2199	.2983	.2999	.2418	.2613	12.47
Miscellaneous & Fixed Charges	.4394	.4777	.5194	.5247	.4590	.4811	26.95	.5544	.5010	.5105	.5150	.4773	.5377	.4958	.5451	.6038	.5601	.5251	25.06
Production Cost	1.6075	1.6790	1.7470	1.7756	1.6866	1.6948	94.92	2.0593	1.8857	1.9306	1.9993	1.9146	2.0609	1.9111	2.0509	2.1511	2.0113	1.9863	94.80
Selling & Administration	.0767	.0931	.1072	.0997	.0814	.0907	5.08	.1150	.0930	.1105	.1100	.1017	.1121	.1059	.1158	.1357	.1022	.1089	5.20
Total Cost	1.6842	1.7721	1.8542	1.8753	1.7680	1.7855	100.00	2.1743	1.9787	2.0411	2.1093	2.0163	2.1730	2.0170	2.1667	2.2868	2.1135	2.0952	100.00
Average No. of Days Worked	21.0	21.2	19.5	19.3	22.0	103.0		18.2	19.2	21.2	21.1	22.1	18.4	21.3	18.0	12.5	17.3	189.3	
No. of Mines Reporting	5	5	4	4	4	* 4		4	4	5	4	4	4	4	4	4	4	* 4	
Production (thousands of tons)	170	162	150	137	184	803		128	149	146	127	154	130	164	125	89	121	1,333	

Bituminous Coal — Cost Table 22.

Average Costs of District 7, Pittsburgh Seam Area, of Western Pennsylvania Subdivision (Division I), by months, November 1933 through January 1935.

(Average Costs per Ton)

Mine Labor	.8390	.8922	.9774	.8927	.8866	.8938	60.51	1.0850	1.0269	1.0384	1.0590	1.1017	1.0430	.9587	.9954	1.0530	.9657	1.0315	59.31
Mine Supplies	.1748	.2043	.1738	.1607	.1671	.1793	12.14	.2114	.1859	.1755	.2020	.2232	.1688	.1398	.1744	.2012	.1822	.1888	10.85
Miscellaneous & Fixed Charges	.2568	.2849	.3102	.2520	.2956	.2818	19.08	.3255	.2931	.3040	.3288	.4048	.3323	.3507	.3170	.2993	.2398	.3105	17.86
Production Cost	1.2706	1.3814	1.4614	1.3054	1.3493	1.3549	91.73	1.6219	1.5059	1.5179	1.5898	1.7297	1.5441	1.4492	1.4878	1.5535	1.3877	1.5308	88.02
Selling & Administration	.1075	.1052	.1195	.1345	.1545	.1221	8.27	.1878	.2041	.2112	.2293	.2350	.2037	.2209	.2401	.1800	.2034	.2084	11.98
Total Cost	1.3781	1.4866	1.5809	1.4399	1.5038	1.4770	100.00	1.8097	1.7100	1.7291	1.8191	1.9647	1.7478	1.6701	1.7279	1.7335	1.5911	1.7392	100.00
Average No. of Days Worked	17.8	17.0	14.6	17.6	17.1	84.1		13.3	17.1	13.5	10.5	8.1	10.7	13.1	10.5	11.8	16.5	125.1	
No. of Mines Reporting	7	9	6	5	6	* 6		6	5	4	5	5	4	3	5	4	6	* 5	
Production (thousands of tons)	54	61	41	24	50	230		40	36	26	23	22	19	18	25	31	46	286	

Bituminous Coal — Cost Table 23.

Average Costs of Districts 8 and 12, Sewickley and Hunkers Areas, of Western Pennsylvania Subdivision (Division I), by months, November 1933 through January 1935.

(Average Costs per Ton)

Mine Labor	.8868	.9430	.9234	.8487	.8683	.8872	62.74	1.1091	1.0779	1.0600	.9834	1.0182	1.0419	1.0320	1.0787	1.1246	1.0665	1.0616	63.92
Mine Supplies	.1904	.2004	.1801	.1530	.1372	.1662	11.75	.1972	.1827	.1740	.1933	.1478	.1792	.1749	.1840	.1912	.1573	.1777	10.70
Miscellaneous & Fixed Charges	.2254	.2817	.2223	.2004	.1936	.2183	15.43	.2474	.2425	.2345	.2389	.2158	.2399	.2190	.2163	.2221	.2347	.2317	13.95
Production Cost	1.3026	1.4251	1.3258	1.2021	1.1991	1.2717	89.92	1.5537	1.5031	1.4685	1.4156	1.3818	1.4610	1.4259	1.4790	1.5379	1.4585	1.4710	88.57
Selling & Administration	.1092	.1518	.1298	.1518	.1594	.1425	10.08	.1724	.1839	.1819	.2030	.1830	.1996	.1998	.1804	.2037	.1978	.1897	11.43
Total Cost	1.4118	1.5769	1.4556	1.3539	1.3585	1.4142	100.00	1.7261	1.6870	1.6504	1.6186	1.5648	1.6606	1.6257	1.6594	1.7416	1.6563	1.6607	100.00
Average No. of Days Worked	11.6	8.7	11.2	13.1	21.3	65.9		16.1	15.6	13.7	10.4	12.9	10.8	13.1	14.1	14.0	17.6	138.3	
No. of Mines Reporting	5	5	4	5	6	* 5		5	6	5	5	5	5	5	4	4	4	* 5	
Production (thousands of tons)	36	26	24	31	57	174		40	48	37	29	36	30	34	33	32	43	362	

Bituminous Coal — Cost Table 24.

Average Costs of District 9, Connellsville Coking Area, of Western Pennsylvania Subdivision (Division I), by months, November 1933 through January 1935.

(Average Costs per Ton)

Mine Labor	.9858	1.0260	.9405	.8978	.9368	.9566	56.38	1.1525	1.1146	1.1050	1.1190	1.0971	1.1854	1.1338	1.0809	1.1099	1.1024	1.1182	58.00
Mine Supplies	.2146	.2499	.2042	.1953	.1787	.2066	12.17	.2584	.2353	.2083	.2397	.2443	.2598	.2275	.2400	.2327	.2107	.2340	12.13
Miscellaneous & Fixed Charges	.4083	.4758	.4083	.4054	.3840	.4136	24.37	.4379	.4352	.4183	.4380	.4514	.4734	.4426	.4358	.4563	.4128	.4386	22.75
Production Cost	1.6087	1.7517	1.5530	1.4990	1.4995	1.5768	92.92	1.8488	1.7851	1.7316	1.7967	1.7928	1.9186	1.8039	1.7567	1.7989	1.7259	1.7908	92.88
Selling & Administration	.1128	.1224	.1171	.1211	.1261	.1200	7.08	.1387	.1295	.1311	.1383	.1398	.1733	.1387	.1240	.1439	.1258	.1373	7.12
Total Cost	1.7215	1.8741	1.6701	1.6201	1.6256	1.6968	100.00	1.9875	1.9146	1.8627	1.9350	1.9326	2.0919	1.9426	1.8807	1.9428	1.8517	1.9281	100.00
Average No. of Days Worked	18.9	14.4	18.6	20.3	22.5	94.7		15.7	16.9	19.5	17.9	17.1	13.9	17.3	17.1	16.2	18.0	169.6	
No. of Mines Reporting	24	22	14	16	16	* 18		16	13	13	12	13	16	18	14	16	17	* 15	
Production (Thousands of tons)	355	278	244	304	396	1,577		230	240	265	223	225	205	277	261	263	324	2,513	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal — Cost Table 25.

Average Costs of District 10, Upper Freeport - Conemaugh Area, of Western Pennsylvania Subdivision (Division I), by months, November 1933 through January 1935.

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Total Average Cost	% of Total Cost	1934 April	May	June	July	August	Sept.	October	November	December	1935 January	10 Mos. Total Apr. '34-Jan. '35 Average Costs	% of Total Cost
Mine Labor	$ .9934	$ .9862	$ .9736	$ .9766	$ .9704	$ .9805	66.47	$1.2864	$1.3031	$1.3116	$1.3206	$1.3429	$1.3634	$1.2657	$1.2608	$1.2800	$1.2475	$1.2932	63.42
Mine Supplies	.1634	.1646	.1828	.1744	.1750	.1712	11.61	.2431	.2371	.2445	.2330	.2606	.2946	.2092	.2373	.2191	.2204	.2374	11.65
Miscellaneous & Fixed Charges	.2319	.2379	.2395	.2386	.2284	.2345	15.90	.3372	.3582	.3694	.3902	.3794	.4400	.3501	.3192	.3417	.2768	.3502	17.17
Production Cost	1.3887	1.3887	1.3959	1.3896	1.3738	1.3862	93.98	1.8667	1.8984	1.9255	1.9438	1.9829	2.0980	1.8250	1.8173	1.8408	1.7447	1.8808	92.24
Selling & Administration	.1017	.0916	.0657	.0718	.1000	.0889	6.02	.1450	.1449	.1514	.1800	.1678	.1948	.1530	.1515	.1586	.1520	.1582	7.76
Total Cost	1.4904	1.4803	1.4616	1.4614	1.4738	1.4751	100.00	2.0117	2.0433	2.0769	2.1238	2.1507	2.2928	1.9780	1.9688	1.9994	1.8967	2.0390	100.00
Average No. of Days Worked	19.3	19.5	19.1	18.2	20.6	96.7		11.3	9.3	9.7	8.1	8.1	7.0	9.2	10.0	9.9	12.0	94.6	
No. of Mines Reporting	18	15	12	14	18	• 15		17	16	16	16	16	16	17	16	17	16	• 16	
Production Tons (000 omitted)	182	170	119	135	201	807		94	77	79	71	71	62	86	92	91	107	830	

Bituminous Coal — Cost Table 26.

Average Costs of District 11, Thick Freeport Area, of Western Pennsylvania Subdivision (Division I), by months, November 1933 through January 1935.

Mine Labor	.9544	.9701	.9677	.9703	.9464	.9606	62.26	1.1492	1.1610	1.2079	1.2165	1.1815	1.2090	1.1690	1.1675	1.2013	1.2207	1.1861	63.93
Mine Supplies	.2648	.2733	.2853	.2931	.2513	.2716	17.61	.3004	.2913	.3142	.2876	.2889	.3077	.2921	.2875	.3250	.3328	.3013	16.24
Miscellaneous & Fixed Charges	.2106	.2400	.2592	.2558	.2145	.2334	15.13	.2493	.2479	.2535	.2712	.2576	.2705	.2554	.2489	.3089	.2912	.2630	14.18
Production Cost	1.4298	1.4834	1.5122	1.5192	1.4122	1.4656	95.00	1.6989	1.7002	1.7756	1.7753	1.7280	1.7872	1.7165	1.7039	1.8292	1.8447	1.7504	94.35
Selling & Administration	.0642	.0828	.0927	.0857	.0673	.0772	5.00	.0885	.0943	.0961	.1163	.0985	.1098	.0922	.1024	.1380	.1286	.1049	5.65
Total Cost	1.4940	1.5662	1.6049	1.6049	1.4795	1.5428	100.00	1.7874	1.7945	1.8717	1.8916	1.8265	1.8970	1.8087	1.8063	1.9672	1.9733	1.8553	100.00
Average No. of Days Worked	21.2	19.0	17.3	16.8	22.1	96.4		19.5	20.9	17.9	18.2	19.0	17.4	20.6	19.0	13.8	14.5	180.8	
No. of Mines Reporting	11	10	8	8	9	• 9		11	9	9	10	10	10	10	10	10	10	• 10	
Production Tons (000 omitted)	376	336	296	284	405	1697		337	339	286	296	330	296	360	335	247	261	3,087	

Bituminous Coal — Cost Table 27.

Average Costs of District 13, Butler-Mercer Area, of Western Pennsylvania Subdivision (Division I), by months, November 1933 through January 1935.

Mine Labor	1.0770	1.1278	1.1226	1.0913	1.0782	1.0973	65.44	1.4473	1.2797	1.3532	1.3097	1.3847	1.3815	1.2846	1.3335	1.2706	1.2381	1.3212	67.05
Mine Supplies	.2274	.2532	.2454	.2476	.2416	.2424	14.46	.4054	.2975	.2711	.2453	.3236	.3163	.2515	.3159	.2499	.2417	.2895	14.69
Miscellaneous & Fixed Charges	.2404	.2274	.2236	.2121	.2115	.2229	13.28	.2616	.2450	.2496	.2366	.2510	.2601	.2387	.2891	.2166	.2024	.2364	12.00
Production Cost	1.5448	1.6084	1.5916	1.5510	1.5313	1.5626	93.18	2.1143	1.8222	1.8739	1.7916	1.9593	1.9879	1.7748	1.8785	1.7371	1.6822	1.8471	93.74
Selling & Administration	.0891	.1080	.1198	.1328	.1227	.1143	6.82	.1397	.0985	.1211	.1244	.1425	.1417	.1163	.1164	.1338	.1103	.1234	6.26
Total Cost	1.6339	1.7164	1.7114	1.6838	1.6540	1.6769	100.00	2.2540	1.9207	1.9950	1.9160	2.1018	2.1296	1.8911	1.9949	1.8709	1.7925	1.9705	100.00
Average No. of Days Worked	19.6	16.7	18.2	18.2	21.3	94.0		12.2	16.7	13.9	14.1	11.5	12.1	15.4	16.0	15.3	17.6	144.8	
No. of Mines Reporting	9	8	8	9	9	• 9		11	8	10	9	11	10	10	11	12	11	• 10	
Production Tons (000 omitted)	50	41	41	45	53	230		32	33	42	31	33	33	44	46	46	52	392	

Bituminous Coal — Cost Table 28.

Average Costs of District 14, Greensburg Area, of Western Pennsylvania Subdivision (Division I), by months, November 1933 through January 1935.

Mine Labor	1.1127	1.1223	1.1143	1.1146	1.1096	1.1144	61.62	1.3699	1.4159	1.3882	1.3992	1.3939	1.4163	1.3408	1.3408	1.3397	1.2843	1.3668	61.84
Mine Supplies	.2167	.1793	.1856	.1785	.1828	.1891	10.46	.2503	.2611	.2809	.2402	.2399	.2907	.2366	.2356	.2274	.2233	.2471	11.18
Miscellaneous & Fixed Charges	.3647	.3875	.3675	.3676	.3493	.3684	20.26	.3704	.4173	.4268	.4034	.4150	.4502	.4273	.4125	.4135	.3741	.4094	18.52
Production Cost	1.6941	1.6891	1.6674	1.6607	1.6417	1.6699	92.34	1.9906	2.0943	2.0959	2.0428	2.0488	2.1572	2.0123	1.9889	1.9806	1.8817	2.0233	91.54
Selling & Administration	.1236	.1502	.1428	.1518	.1286	.1385	7.66	.1784	.1899	.1910	.1823	.1909	.2295	.1799	.1777	.2009	.1613	.1870	8.46
Total Cost	1.8177	1.8393	1.8102	1.8125	1.7703	1.8084	100.00	2.1690	2.2842	2.2869	2.2251	2.2397	2.3867	2.1922	2.1666	2.1815	2.0430	2.2103	100.00
Average No. of Days Worked	21.4	18.1	21.0	21.0	24.2	105.7		19.5	14.9	14.0	15.3	16.1	13.6	16.0	15.7	15.6	18.0	158.7	
No. of Mines Reporting	6	6	5	4	5	• 5		6	6	6	6	6	5	6	6	6	6	• 6	
Production Tons (000 omitted)	148	128	137	124	161	698		124	104	99	107	113	96	118	113	114	130	1,115	

• A simple average of the total number of mines reporting for the several months.

Bituminous Coal — Cost Table 29

Average Costs of District 15, Latrobe Area, of Western Pennsylvania Subdivision (Division I), by months, November 1933 through January 1935.

(Average Costs per Ton)

	1933 Nov.	Dec.	Jan.	Feb.	March	5 Mos. Total Average Cost	5 Mos. Total % of Total Cost	1934 April	May	June	July	August	September	October	November	December	1935 January	10 Mos. Total Apr. '34–Jan. '35 Average Costs	10 Mos. Total Apr. '34–Jan. '35 % of Total Cost
Mine Labor		$1.0327	$1.0791	$.9834	$.9948	$1.0167	59.97		$1.2280	$1.2266	$1.2460	$1.2534	$1.2225	$1.2253	$1.2135	$1.1955	$1.1825	$1.2187	61.00
Mine Supplies		.2139	.2862	.1993	.1929	.2185	12.89		.3165	.2388	.2442	.2604	.2787	.2588	.2188	.2639	.2619	.2600	13.01
Miscellaneous & Fixed Charges		.3051	.3061	.2819	.2690	.2865	16.91	a/	.3109	.3395	.3206	.3238	.3385	.3043	.3109	.3052	.3006	.3150	15.77
Production Cost		1.5517	1.6714	1.4646	1.4567	1.5217	89.77		1.8554	1.8049	1.8108	1.8376	1.8397	1.7884	1.7432	1.7666	1.7450	1.7937	89.78
Selling & Administration		.1757	.1523	.1793	.1809	.1735	10.23		.2153	.2062	.2301	.2136	.2376	.2200	.1882	.1802	.1723	.2042	10.22
Total Cost	No Report	1.7274	1.8237	1.6439	1.6376	1.6952	100.00		2.0707	2.0111	2.0409	2.0512	2.0773	2.0084	1.9314	1.9468	1.9173	1.9979	100.00
Average No. of Days Worked		12.5	14.5	17.5	19.1	63.6			12.0	10.4	11.6	11.0	8.8	12.4	13.4	13.4	14.1	107.1	
No. of Mines Reporting		5	4	4	5	• 4			4	5	4	4	4	5	4	4	5	• 5	
Production Tons (000 omitted)		29	38	46	60	173			27	25	25	24	20	33	30	31	38	253	

a/ Latrobe combined with Ligonier District for concealment.

• A simple average of the total number of mines reported for the several months.

Bituminous Coal — Cost Table 30

Average Costs of District 16, Ligonier Area, of Western Pennsylvania Subdivision (Division I), by months, November 1933 through January 1935.

Mine Labor	.9125	.8983	.9067	.9068	.9031	.9055	59.67	a/	1.2584	1.1401	1.2037	1.2518	1.1634	1.1732	1.0845	1.0565	1.0628	1.0500	1.1286	59.63
Mine Supplies	.1432	.1760	.1384	.1334	.1626	.1506	9.93	a/	.3155	.1903	.2623	.2467	.1961	.2129	.1987	.2145	.1916	.1784	.2217	11.72
Miscellaneous & Fixed Charges	.2350	.2232	.2652	.2578	.2327	.2430	16.02	a/	.3080	.2799	.3193	.3714	.3203	.2756	.2569	.2274	.2279	.2696	.2746	14.50
Production Cost	1.2907	1.2975	1.3103	1.2980	1.2984	1.2991	85.62	a/	1.8819	1.6103	1.7853	1.8699	1.6798	1.6617	1.5401	1.4984	1.4823	1.4980	1.6249	85.85
Selling & Administration	.2040	.2356	.2332	.2355	.1860	.2183	14.38	a/	.2342	.2964	.3359	.3987	.3530	.3218	.2625	.2499	.2561	.2096	.2678	14.15
Total Cost	1.4947	1.5331	1.5435	1.5335	1.4844	1.5174	100.00	a/	2.1161	1.9067	2.1212	2.2686	2.0328	1.9835	1.8026	1.7483	1.7384	1.7076	1.8927	100.00
Average No. of Days Worked	13.8	13.2	13.7	12.3	17.7	70.7			12.5	13.2	11.9	10.4	12.1	13.8	17.8	17.4	15.0	18.6	42.7	
No. of Mines Reporting	3	3	4	4	3	• 5 b/			6	3	3	3	3	3	4	3	3	4	• 4 b/	
Production Tons (000 omitted)	24	24	26	26	29	129		a/	35	12	11	9	13	15	27	29	24	35	210	

a/ Includes Latrobe district, for concealment.

b/ Includes Latrobe for April.

• A simple average of the total number of mines reported for the several months.

Bituminous Coal — Cost Table 31 — Average Costs of Ohio subdivision of Division I, by months, November 1934 through January 1935

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Total Average Cost	5 Mos. Total % of Total Cost	1934 April	May	June	July	August	Sept.	October	Nov.	1934 Dec.	1935 Jan.	10 Mos. Total Apr. '34–Jan. '35 Average Cost	10 Mos. Total Apr. '34–Jan. '35 % of Total Cost
Mine Labor	$ .9656	$ .9593	$ .9567	$ .9452	$ .9446	$ .9534	62.55	$1.1832	$1.1605	$1.1307	$1.1296	$1.1333	$1.1668	$1.1616	$1.1668	$1.1547	$1.1361	$1.1517	63.87
Mine Supplies	.2151	.2011	.1817	.1835	.1798	.1910	12.53	.2618	.2262	.2184	.2336	.2323	.2575	.2247	.2434	.2323	.2155	.2335	12.95
Miscellaneous & Fixed Charges	.2473	.2494	.2478	.2464	.2380	.2452	16.08	.2923	.2690	.2542	.2672	.2504	.2798	.2641	.2670	.2645	.2561	.2654	14.72
Production Cost	1.4280	1.4098	1.3862	1.3751	1.3624	1.3896	91.16	1.7373	1.6557	1.6033	1.6304	1.6160	1.7041	1.6504	1.6772	1.6515	1.6077	1.6506	91.54
Selling & Administratinn	.1257	.1554	.1432	.1314	.1234	.1347	8.84	.1549	.1377	.1550	.1513	.1353	.1657	.1502	.1558	.1628	.1542	.1525	8.46
Total Cost	1.5537	1.5652	1.5294	1.5065	1.4858	1.5243	100.00	1.8922	1.7934	1.7583	1.7817	1.7513	1.8698	1.8006	1.8330	1.8143	1.7619	1.8031	100.00
Average No. of Days Worked	15.9	15.4	17.1	18.4	21.3	88.0		12.2	13.2	13.6	13.2	13.6	11.7	14.5	14.7	15.4	17.0	138.0	
No. of Mines Reporting	60	56	54	52	65	57*		53	52	55	54	56	58	64	65	57	56	57*	
Production (000 omitted) Tons	1,065	1,024	1,106	1,126	1,524	5,845		744	764	834	888	1,015	855	1,096	1,131	1,140	1,228	9,695	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal — Cost Table 32 — Average Costs of Area 1 of Ohio subdivision (Division I), by months, November 1934 through January 1935.

Mine Labor	$1.0096	$1.0099	$ .9933	$ .9734	$ .9722	$ .9882	61.35	$1.3165	$1.2979	$1.3144	$1.3031	$1.3006	$1.3158	$1.2245	$1.2078	$1.1743	$1.1670	$1.2401	61.81
Mine Supplies	.2256	.2168	.1860	.1764	.1771	.1923	11.93	.3428	.2658	.2858	.2834	.2788	.3032	.2413	.2400	.2167	.2128	.2543	12.68
Miscellaneous & Fixed Charges	.2865	.2931	.2816	.2783	.2692	.2801	17.39	.3815	.3751	.3744	.3671	.3578	.3353	.3024	.2893	.2790	.2755	.3185	15.88
Production Cost	1.5217	1.5198	1.4609	1.4281	1.4185	1.4606	90.67	2.0408	1.9388	1.9746	1.9536	1.9372	1.9543	1.7682	1.7371	1.6700	1.6553	1.8129	90.37
Selling & Administration	.1311	.1619	.1645	.1519	.1409	.1503	9.33	.2260	.1858	.2231	.2006	.2095	.2115	.1832	.1780	.1839	.1823	.1933	9.63
Total Cost	1.6528	1.6817	1.6254	1.5800	1.5594	1.6109	100.00	2.2668	2.1246	2.1977	2.1542	2.1467	2.1658	1.9514	1.9151	1.8539	1.8376	2.0062	100.00
Average No. of Days Worked	12.7	13.8	16.5	18.6	21.6	83.2		9.5	9.1	9.3	8.2	8.4	8.4	12.5	14.0	14.7	17.6	111.7	
No. of Mines Reporting	24	25	23	24	25	24 •		17	19	20	19	20	23	23	23	20	21	21 •	
Production (000 omitted) Tons	292	362	418	469	570	2,111		175	195	176	184	207	216	338	371	426	449	2,737	

Bituminous Coal — Cost Table 33 — Average Costs of Area 2 of Ohio subdivision (Division I), by months, November 1934 through January 1935.

Mine Labor	$1.0550	$1.0449	$1.0714	$1.0726	$1.0513	$1.0597	64.19	$1.3102	$1.2755	$1.2898	$1.2806	$1.3280	$1.3319	$1.2851	$1.2894	$1.2575	$1.2039	$1.2773	64.72
Mine Supplies	.2281	.2453	.2178	.2599	.2416	.2373	14.38	.2824	.2819	.2910	.3055	.2821	.2746	.2508	.2749	.3186	.2226	.2750	13.93
Miscellaneous & Fixed Charges	.2109	.2088	.2034	.1932	.2193	.2076	12.58	.2181	.2066	.2292	.1944	.2233	.2457	.2227	.2482	.2672	.2587	.2358	11.95
Production Cost	1.4940	1.4990	1.4926	1.5257	1.5122	1.5046	91.15	1.8107	1.7640	1.8100	1.7805	1.8334	1.8522	1.7586	1.8125	1.8433	1.6852	1.7881	90.60
Selling & Administration	.0589	.1820	.1647	.1501	.1769	.1462	8.85	.1885	.2012	.1689	.2184	.1767	.1610	.1737	.1909	.1772	.2025	.1856	9.40
Total Cost	1.5529	1.6810	1.6573	1.6758	1.6891	1.6508	100.00	1.9992	1.9652	1.9789	1.9989	2.0101	2.0132	1.9323	2.0034	2.0205	1.8877	1.9737	100.00
Average No. of Days Worked	20.8	20.9	22.6	19.9	22.0	106.2		15.2	15.2	13.8	12.6	13.9	12.6	18.0	17.8	19.4	23.3	161.6	
No. of Mines Reporting	7	5	7	6	7	6 •		6	7	8	6	6	6	10	9	8	7	8 •	
Production (000 omitted) Tons	74	52	85	68	89	368		51	54	65	37	38	40	84	77	82	90	618	

Bituminous Coal — Cost Table 34 — Average Costs of Area 3 of Ohio subdivision (Division I), by months, November 1934 through January 1935.

Mine Labor	$ .9378	$ .9219	$ .9153	$ .9081	$ .9154	$ .9199	63.17	$1.1260	$1.0960	$1.0592	$1.0734	$1.0787	$1.1019	$1.1145	$1.1307	$1.1281	$1.1072	$1.1012	64.82
Mine Supplies	.2093	.1830	.1737	.1804	.1752	.1853	12.72	.2326	.2054	.1907	.2159	.2174	.2399	.2131	.2416	.2314	.2163	.2206	12.99
Miscellaneous & Fixed Charges	.2348	.2269	.2306	.2271	.2194	.2273	15.61	.2696	.2352	.2213	.2436	.2230	.2621	.2501	.2570	.2545	.2430	.2453	14.44
Production Cost	1.3819	1.3368	1.3196	1.3156	1.3100	1.3325	91.50	1.6282	1.5366	1.4712	1.5329	1.5191	1.6039	1.5777	1.6293	1.6140	1.5665	1.5671	92.25
Selling & Administration	.1306	.1493	.1253	.1130	.1063	.1237	8.50	.1277	.1128	.1334	.1340	.1133	.1496	.1307	.1398	.1467	.1296	.1317	7.75
Total Cost	1.5125	1.4861	1.4449	1.4286	1.4163	1.4562	100.00	1.7559	1.6494	1.6046	1.6669	1.6324	1.7535	1.7084	1.7691	1.7607	1.6961	1.6988	100.00
Average No. of Days Worked	17.3	16.2	17.0	18.1	21.0	89.6		13.2	15.8	15.6	15.9	16.2	13.6	15.3	14.8	14.7	16.1	151.2	
No. of Mines Reporting	29	26	24	22	33	27•		30	26	27	29	30	29	31	33	29	28	30 •	
Production (000 omitted) Tons	699	609	604	589	865	3,366		519	514	594	667	770	599	673	683	632	689	6,340	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal — Cost Table 35

Average Costs of Michigan subdivision of Divisico I
by months, November 1934 through January 1935.

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Total Average Cost	% of Total Cost	1934 April	May	June	July	August	Sept.	October	Nov.	1934 Dec.	1935 Jan.	10 Mos. Total Apr. '34-Jan. '35 Average Cost	% of Total Cost
Mine Labor	$1.5717	$1.6178	$1.5452	$1.5765	$1.5429	$1.5703	57.86	$2.0395	$2.0413	$2.3129	$2.1059	$2.1119	$2.0572	$1.8668	$1.8318	$1.8233	$1.8443	$1.9308	60.63
Mine Supplies	.3964	.4225	.4384	.4601	.4348	.4299	15.84	.6455	.8106	.9749	.8054	.5683	.5687	.5042	.4880	.4713	.4837	.5577	17.51
Miscellaneous & Fixed Charges	.4532	.4298	.4412	.4688	.4886	.4512	16.62	.5262	.3424	.3555	.4701	.3522	.4737	.4113	.4080	.4920	.4812	.4464	14.01
Production Cost	2.4213	2.4701	2.4248	2.5054	2.4663	2.4514	90.32	3.2112	3.1943	3.6433	3.3814	3.0324	3.0996	2.7823	2.7278	2.7866	2.8142	2.9349	92.15
Selling & Administration	.2684	.2619	.2434	.2847	.2614	.2626	9.68	.4215	.3781	.4571	.4785	.2517	.2441	.1454	.1358	.2397	.2257	.2499	7.85
Total Cost	2.6897	2.7320	2.6682	2.7901	2.7077	2.7140	100.00	3.6327	3.5724	4.1004	3.8599	3.2841	3.3437	2.9277	2.8636	3.0263	3.0399	3.1848	100.00
Average No. of Days Worked	18.6	18.6	21.7	18.3	22.0	99.2		13.9	7.6	7.2	12.3	19.8	18.3	21.3	20.7	21.0	22.2		164.3
No. of Mines Reporting	5	6	6	5	4	5*		6	4	4	3	4	4	5	5	5	5		5*
Production, Tons (000 omitted)	59	63	71	52	58	303		35	15	12	12	24	27	48	52	58	64		347

* A simple average of the total number of mines reported for the several months

Bituminous Coal — Cost Table 36

Average Costs of Panhandle subdivision of Northern West Virginia, (Division I)
by months, November 1934 through January 1935.

Mine Labor	$ .9698	$ .9713	$ .9939	$1.0307	$	$ .9823a/	61.96	$1.1460	$1.1324	$1.0769	$1.1025	$1.0992	$1.1848	$1.1351	$1.1620	$1.1452	$1.1374	$1.1281	65.31
Mine Supplies	.2114	.2409	.2448	.3001		.2381a/	15.02	.2447	.3059	.1653	.1908	.2100	.2683	.1839	.2260	.1975	.2520	.2224	12.88
Miscellaneous & Fixed Charges	.2192	.2301	.2750	.2805		.2396a/	15.11	.2832	.2472	.2610	.2377	.1795	.2618	.2366	.2347	.2101	.2084	.2355	13.64
Production Cost	1.4004	1.4423	1.5137	1.6113		1.4600a/	92.09	1.6739	1.6855	1.5032	1.5310	1.4887	1.7149	1.5556	1.6227	1.5528	1.5978	1.5860	91.83
Selling & Administration	.0961	.1262	.1482	.1809		.1254a/	7.91	.1170	.1370	.1380	.1246	.1318	.1617	.1342	.1359	.1973	.1558	.1412	8.17
Total Cost	1.4965	1.5685	1.6619	1.7922		1.5854a/	100.00	1.7909	1.8225	1.6412	1.6556	1.6205	1.8766	1.6898	1.7586	1.7501	1.7536	1.7272	100.00
Average No. of Days Worked	18.6	20.9	21.6	20.4		81.5		19.8	18.1	19.7	21.5	21.1	13.3	20.7	16.1	15.4	18.5		184.2
No. of Mines Reporting	7	8	5	5		6*		6	6	6	5	5	5	5	5	5	5		5*
Production, Tons (000 omitted)	246	202	98	86		632a/		216	213	226	220	225	122	203	171	169	200		1,965

* A simple average of the total number of mines reported for the several months.
a/ Panhandle not available for March. Total for 4 months only.

Bituminous Coal — Cost Table 37

Average Costs of Northern West Virginia subdivision of Division I by months, November 1934 through January 1935.

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Total Average Cost	% of Total Cost	1934 April	May	June	July	August	Sept.	October	Nov.	1934 Dec.	1935 Jan.	10 Mos. Total Avr. '34-Jan. '35 Average Cost	% of Total Cost
Mine Labor	$ .7742	$ .7756	$ .7785	$ .7722a/	$ .7743	$ .7749	58.92	$1.1332	$ .9626	$ .9839	$ .9928	$1.0037	$1.0176	$ .9924	$ .9918	$1.0024	$ .9800	$ .9957	59.73
Mine Supplies	.1622	.1582	.1643	.1639a/	.1602	.1617	12.30	.3011	.1759	.1697	.1828	.2029	.2254	.2000	.2107	.1916	.1874	.1967	11.80
Miscellaneous & Fixed Charges	.2114	.2239	.2310	.2286a/	.2188	.2227	16.93	.3995	.2521	.2615	.2708	.2685	.2907	.2618	.2604	.2683	.2542	.2693	16.15
Production Cost	1.1478	1.1577	1.1738	1.1648a/	1.1533	1.1593	88.15	1.8338	1.3906	1.4151	1.4464	1.4751	1.5337	1.4542	1.4629	1.4623	1.4216	1.4617	87.68
Selling & Administration	.1384	.1546	.1561	.1612a/	.1661	.1558	11.85	.2545	.2005	.1787	.1862	.1968	.2360	.2073	.2152	.2275	.1925	.2054	12.32
Total Cost	1.2862	1.3123	1.3299	1.3261a/	1.3194	1.3151	100.00	2.0883	1.5911	1.5938	1.6326	1.6719	1.7697	1.6615	1.6781	1.6898	1.6141	1.6671	100.00
Average No. of Days Worked	17.6	16.9	17.8	17.9	21.4	88.6		6.8	16.9	15.5	14.0	12.9	11.3	13.6	13.5	13.2	15.7	133.4	
No. of Mines Reporting	65	69	59	69	65	65*		49	62	59	51	56	57	59	59	64	64	58*	
Production, Tons (000 omitted)	1,325	1,392	1,301	1,467a/	1,599	7,084		383	1,303	1,188	1,039	1,022	904	1,142	1,117	1,093	1,277	10,468	

* A simple average of the total number of mines reported for the several months.
a/ Freeport-Kittanning is included in February only of the first six months, but is included in all months from May 1934 through January 1935

Bituminous Coal — Cost Table 38

Average Costs of Pittsburg and Redstone area of Northern West Virginia subdivision (Division I) by months, November 1934 through January 1935.

Mine Labor	$ .7465	$ .7519	$ .7496	$ .7471	$ .7522	$ .7496	58.47	$1.1053	$ .9328	$ .9525	$ .9746	$ .9806	$ .9903	$ .9644	$ .9627	$ .9746	$ .9485	$ .9681	59.46
Mine Supplies	.1600	.1534	.1632	.1666	.1594	.1604	12.51	.2858	.1743	.1651	.1777	.2004	.2275	.1973	.2141	.1909	.1875	.1950	11.98
Miscellaneous & Fixed Charges	.2087	.2137	.2311	.2234	.2091	.2168	16.91	.4241	.2419	.2548	.2681	.2625	.2851	.2557	.2622	.2744	.2489	.2663	16.36
Production Cost	1.1152	1.1190	1.1439	1.1371	1.1207	1.1268	87.89	1.8152	1.3490	1.3724	1.4204	1.4435	1.5029	1.4174	1.4390	1.4399	1.3849	1.4294	87.80
Selling & Administration	.1362	.1516	.1616	.1601	.1662	.1552	12.11	.2575	.1841	.1695	.1788	.1858	.2281	.2016	.2126	.2232	.1922	.1987	12.20
Total Cost	1.2514	1.2706	1.3055	1.2972	1.2869	1.2820	100.00	2.0727	1.5331	1.5419	1.5992	1.6323	1.7310	1.6190	1.6516	1.6631	1.5771	1.6281	100.00
Average No. of Days Worked	18.3	17.4	17.9	18.3	21.5	93.4		6.6	17.4	15.9	14.3	13.4	11.4	13.6	13.3	12.7	15.7	134.3	
No. of Mines Reporting	43	47	38	42	43	43*		31	40	38	37	37	39	40	41	42	44	39*	
Production, Tons (000 omitted)	1,102	1,133	1,017	1,113	1,203	5,568		312	1,033	948	856	824	718	911	889	828	1,035	8,354	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal — Cost Table 39

Average Costs of Sewickley 1/ area of Northern West Virginia subdivision (Division I) by months, November 1934 through January 1935.

Mine Labor	$ .7994	$ .7671	$ .7532	$ .7416	$ .7259	$ .7505	58.38	$1.1280	$ .9865	$ .9983	$ .9591	$ .9805	$1.0164	$ .9557	$ .9468	$ .9309	$ .9645	$ .9730	59.76
Mine Supplies	.1934	.1812	.1481	.1348	.1419	.1545	12.02	.4961	.1951	.1871	.1863	.1968	.2106	.1637	.1691	.1666	.1686	.1873	11.50
Miscellaneous & Fixed Charges	.1953	.2482	.1904	.1671	.2049	.2043	15.90	.2418	.2400	.2260	.2214	.2284	.2390	.2200	.1583	.1630	.2001	.2109	12.95
Production Cost	1.1881	1.1965	1.0917	1.0635	1.0727	1.1093	86.30	1.8659	1.4216	1.4114	1.3668	1.4057	1.4660	1.3394	1.2742	1.2605	1.3332	1.3712	84.21
Selling & Administration	.1624	.2027	.1535	.1803	.1781	.1762	13.70	.3459	.3512	.2243	.2301	.2429	.2906	.2256	.2379	.2875	.1997	.2571	15.79
Total Cost	1.3505	1.3992	1.2452	1.2438	1.2508	1.2855	100.00	2.2118	1.7728	1.6357	1.5969	1.6486	1.7566	1.5650	1.5121	1.5480	1.5329	1.6283	100.00
Average No. of Days Worked	12.3	13.1	15.2	16.2	21.0	77.8		6.0	12.8	13.2	12.5	10.8	9.7	12.5	12.6	13.2	13.9	116.1	
No. of Mines Reporting	6	7	6	7	8	7*		4	9	8	6	7	7	6	6	7	7	7*	
Production, Tons (000 omitted)	101	134	149	174	245	803		18	148	139	117	112	97	115	116	133	133	1,128	

1/ Freeport-Kittanning combined with Sewickley in all months from May 1934 through January 1935. * A simple average of the total number of mines reported for the several months.

Bituminous Coal — Cost Table 40

Average Costs of Preston County area of Northern West Virginia subdivision (Division I) by months, November 1934 through January 1935.

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Total Average Cost	5 Mos. Total % of Total Cost	1934 April	May	June	July	August	Sept.	October	Nov.	Dec.	Jan.	10 Mos. Total Apr. '34–Jan. '35 Average Cost	10 Mos. Total Apr. '34–Jan. '35 % of Total Cost
Mine Labor	$ .9149	$ .9145	$ .9058	$ .9155	$ .9191	$ .9140	65.53	$1.1993	$1.1083	$1.2219	$1.3337	$1.1699	$1.1838	$1.1123	$1.1185	$1.0950	$1.1204	$1.1461	62.00
Mine Supplies	.1533	.1604	.2037	.2201	.2286	.1968	14.11	.3860	.2449	.2645	.3564	.2982	.3231	.2515	.2563	.2841	.1893	.2794	15.11
Miscellaneous & Fixed Charges	.2035	.1677	.1787	.2134	.2053	.1945	13.95	.2375	.2173	.2450	.2852	.2935	.2645	.2117	.2182	.1977	.2080	.2307	12.48
Production Cost	1.2717	1.2426	1.2882	1.3490	1.3530	1.3053	93.59	1.8228	1.5705	1.7314	1.9753	1.7616	1.7714	1.5755	1.5930	1.5768	1.5177	1.6562	89.59
Selling Administration	.1265	.0805	.0739	.0985	.0736	.0894	6.41	.0568	.0588	.1973	.2175	.2358	.2880	.2575	.2559	.2222	.1627	.1924	10.41
Total Cost	1.3982	1.3231	1.3621	1.4475	1.4268	1.3947	100.00	1.8796	1.6293	1.9287	2.1928	1.9974	2.0594	1.8330	1.8489	1.7990	1.6804	1.8486	100.00
Average No. of Days Worked	13.5	13.7	17.7	16.7	20.2	81.8		11.9	15.1	7.2	6.0	8.7	7.9	10.9	11.4	16.1	13.4	108.6	
No. of Mines Reporting	8	8	7	9	6	8*		7	7	6	4	6	5	6	5	7	6	6*	
Production, Tons (000 omitted)	40	42	50	54	52	238		26	35	15	10	25	23	33	29	40	24	260	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal — Cost Table 41

Average Costs of Sewell area of Northern West Virginia subdivision (Division I) By months, November 1934 through January 1935.

Mine Labor	$1.0429	$1.0438	$1.0940	$1.0735	$1.0855	$1.0687	60.97	$1.3984	$1.2163	$1.2646	$1.2822	$1.2914	$1.2584	$1.3061	$1.3202	$1.3142	$1.8479	$1.2939	61.30
Mine Supplies	.1580	.1856	.1821	.1789	.1801	.1771	10.10	.2630	.1353	.1748	.2216	.2088	.1913	.2606	.2169	.1934	.2142	.2028	9.61
Miscellaneous & Fixed Charges	.2709	.3512	.3333	.3869	.3770	.3448	19.67	.3767	.4072	.3960	.4135	.4143	.4358	.4083	.3967	.3957	.4159	.4069	19.28
Production Cost	1.4718	1.5806	1.6094	1.6393	1.6426	1.5906	90.74	2.0381	1.7588	1.8354	1.9173	1.9145	1.8855	1.9750	1.9338	1.9033	1.9780	1.9036	90.19
Selling Administration	.1445	.1564	.1431	.1791	.1849	.1623	9.26	.3442	.1952	.2034	.2019	.2030	.2246	.2239	.1976	.1827	.1920	.2071	9.81
Total Cost	1.6163	1.7370	1.7525	1.8184	1.8275	1.7529	100.00	2.3823	1.9540	2.0388	2.1192	2.1175	2.1101	2.1989	2.1314	2.0860	2.1700	2.1107	100.00
Average No. of Days Worked	20.2	21.2	22.2	20.1	21.3	105.0		7.2	21.8	20.0	17.8	14.8	15.9	18.3	19.6	19.3	21.5	176.2	
No. of Mines Reporting	8	7	8	7	8	7*		7	6	7	4	6	6	7	7	8	7	6*	
Production, Tons (000 omitted)	83	83	85	81	99	431		27	88	86	55	61	66	82	84	92	85	726	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal — Cost Table 42. — Average Costs of Southern Subdivision 1 of Division I, by months November 1933 through January 1935.

	(Average Costs per Ton) 1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Total Average Cost	% of Total Cost	April	May	6 Mos. Composite a/ June - Nov. '34	Dec.	1935 Jan.	10 Mos. Total Apr. '34-Jan. '35 Average Costs	% of Total Cost
Mine Labor	$ .9411	$ .9597	$ .9413	$ .9352	$ .9400	$ .9427	56.89	$1.1438	$1.1278	$1.1462	$1.1707	$1.1440	$1.1459	58.85
Mine Supplies	.2416	.2514	.2143	.2240	.2239	.2293	13.84	.2730	.2672	.2737	.2856	.2484	.2713	13.93
Miscellaneous & Fixed Charges	.3292	.3461	.3073	.3159	.2930	.3157	19.05	.3417	.3336	.3527	.3090	.3324	.3324	17.07
Production Cost	1.5119	1.5572	1.4629	1.4751	1.4569	1.4877	89.78	1.7585	1.7286	1.7516	1.8090	1.7014	1.7496	89.85
Selling & Administration	.1674	.1812	.1627	.1685	.1693	.1693	10.22	.1813	.1731	.2013	.2267	.1926	.1977	10.15
Total Cost	1.6793	1.7384	1.6256	1.6436	1.6262	1.6570	100.00	1.9398	1.9017	1.9529	2.0357	1.8940	1.9473	100.00
Average No. of Days Worked	17.1	15.9	20.0	19.3	22.1	94.4		18.6	19.8	106.9	15.5	18.6	182.1	
No. of Mines Reporting	143	139	153	154	160	* 150		155	155	164	153	153	* 156	
Production Tons (000 omitted)	2,583	2,641	3,437	3,339	3,872	15,872		3,075	3,484	19,359	2,917	3,479	32,294	

* A simple average of the total number of mines reporting for the several months.
a/ Southern No. 1 totals not separately available for these months, due to the method of reporting.

Bituminous Coal — Cost Table 43. — Average Costs of Pocahontas area of Southern Subdivision 1 (Division I), by months November 1933 through January 1935.

Mine Labor	.8886	.9153	.8884	.8700	.8774	.8859	55.56	1.0786	1.0618	1.0946	1.1380	1.1113	1.0947	57.75
Mine Supplies	.2390	.2581	.2080	.1965	.2041	.2175	13.64	.2479	.2491	.2569	.2815	.2469	.2562	13.52
Miscellaneous & Fixed Charges	.3408	.3656	.3295	.3301	.3031	.3305	20.72	.3597	.3379	.3573	.4064	.3369	.3573	18.85
Production Cost	1.4684	1.5390	1.4259	1.3966	1.3846	1.4339	89.92	1.6862	1.6488	1.7088	1.8259	1.6951	1.7082	90.12
Selling & Administration	.1617	.1751	.1551	.1575	.1582	.1606	10.08	.1687	.1540	.1916	.2259	.1838	.1873	9.88
Total Cost	1.6301	1.7141	1.5810	1.5541	1.5428	1.5945	100.00	1.8549	1.8028	1.9004	2.0518	1.8789	1.8955	100.00
Average No. of Days Worked	16.1	13.7	17.7	18.9	22.2	88.6		18.6	20.9	103.5	14.0	17.1	174.1	
No. of Mines Reporting	67	66	67	67	70	* 67		65	68	74	66	65	* 68	
Production Tons (000 omitted)	1,321	1,253	1,603	1,731	2,033	7,941		1,585	1,947	10,499	1,421	1,699	17,151	

* A simple average of the total number of mines reporting for the several months.
a/ Southern No. 1 totals not separately available for these months, due to the method of reporting.

Bituminous Coal — Cost Table 44. — Average Costs of Greenbrier area of Southern Subdivision 1 (Division I), by months November 1933 through January 1935.

Mine Labor	.8271	.9053	.8945	.9074	.9003	.8935	56.50	1.0849	1.1079	1.0935	1.0380	1.0179	1.0767	57.32
Mine Supplies	.2340	.2123	.2015	.2364	.2090	.2162	13.67	.2366	.2796	.3040	.2640	.2098	.2740	14.59
Miscellaneous & Fixed Charges	.3270	.3356	.2935	.3198	.2807	.3069	19.41	.3399	.3960	.3499	.2682	.2578	.3310	17.62
Production Cost	1.3881	1.4532	1.3895	1.4636	1.3900	1.4166	89.58	1.6614	1.7835	1.7474	1.5702	1.4855	1.6817	89.53
Selling & Administration	.1344	.1558	.1624	.1800	.1732	.1647	10.42	.1709	.1787	.2135	.2000	.1740	.1967	10.47
Total Cost	1.5225	1.6090	1.5519	1.6436	1.5632	1.5813	100.00	1.8323	1.9622	1.9609	1.7702	1.6595	1.8784	100.00
Average No. of Days Worked	18.3	20.1	22.8	19.5	22.2	102.9		18.7	15.0	86.3	17.0	21.6	156.6	
No. of Mines Reporting	7	7	10	9	10	* 9		10	10	9	9	9	* 9	
Production Tons (000 omitted)	84	139	199	169	198	789		167	133	621	137	182	1,240	

* A simple average of the total number of mines reporting for the several months.
a/ Southern No. 1 totals not separately available for these months, due to the method of reporting.

Bituminous Coal — Cost Table 45. — Average Costs of Winding Gulf area of Southern Subdivision 1 (Division I) by months November 1933 through January 1935.

	(Average Costs per Ton) 1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Total Average Cost	5 Mos. Total % of Total Cost	April	May	6 Mos. Composite a/ June - Nov. '34	Dec.	1935 Jan.	10 Mos. Total Apr. '34-Jan. '35 Average Costs	% of Total Cost
Mine Labor	$ .9735	$ .9871	$ .9626	$ .9772	$ .9988	$ .9798	57.61	$1.1987	$1.2004	$1.1796	$1.1820	$1.1566	$1.1810	59.40
Mine Supplies	.2275	.2347	.2172	.2515	.2535	.2372	13.94	.3110	.3055	.2890	.2980	.2493	.2890	14.53
Miscellaneous & Fixed Charges	.3171	.3229	.2965	.3028	.2899	.3042	17.89	.3241	.3195	.2937	.3145	.2730	.2988	15.03
Production Cost	1.5181	1.5447	1.4763	1.5315	1.5422	1.5212	89.44	1.8338	1.8254	1.7623	1.7945	1.6789	1.7688	88.96
Selling & Administration	.1592	.1842	.1717	.1952	.1865	.1797	10.56	.2001	.2055	.2220	.2426	.2159	.2196	11.04
Total Cost	1.6773	1.7289	1.6480	1.7267	1.7287	1.7009	100.00	2.0339	2.0309	1.9843	2.0371	1.8948	1.9884	100.00
Average No. of Days Worked	19.6	18.3	22.3	19.5	22.0	101.7		18.3	18.5	136.2	16.9	19.7	209.6	
No. of Mines Reporting	36	36	38	42	44	• 39		44	39	42	40	41	• 41	
Production Tons (000 omitted)	704	654	911	812	915	3,996		729	721	4,478	726	866	7,520	

• A simple average of the total number of mines reporting for the several months.
a/ Southern No. 1 totals not separately available for those months, due to the method of reporting.

Bituminous Coal — Cost Table 46. — Average Costs of New River low volatile area of Southern Subdivision 1 (Division I) by months November 1933 through January 1935.

Mine Labor	1.0593	1.0358	1.0444	1.0676	1.0518	1.0514	59.12	1.2668	1.2468	1.2591	1.2598	1.2366	1.2560	61.23
Mine Supplies	.2714	.2647	.2281	.2612	.2460	.2523	14.19	.3033	.2766	.2971	.2855	.2606	.2902	14.15
Miscellaneous & Fixed Charges	.3154	.3330	.2754	.2931	.2723	.2951	16.60	.3158	.3232	.3030	.2941	.2993	.3050	14.87
Production Cost	1.6461	1.6335	1.5479	1.6219	1.5701	1.5988	89.91	1.8859	1.8466	1.8592	1.8394	1.7965	1.8512	90.25
Selling & Administration	.2010	.1969	.1685	.1611	.1775	.1793	10.09	.1952	.1932	.2013	.2161	.1900	.2001	9.75
Total Cost	1.8471	1.8304	1.7164	1.7830	1.7476	1.7781	100.00	2.0811	2.0398	2.0605	2.0555	1.9865	2.0513	100.00
Average No. of Days Worked	16.8	18.5	22.6	19.9	21.9	99.7		19.0	19.6	107.4	17.9	20.5	184.4	
No. of Mines Reporting	33	30	38	36	36	• 35		36	38	39	38	38	• 38	
Production Tons (000 omitted)	474	595	724	628	726	3,147		596	662	3,760	633	732	6,383	

• A simple average of the total number of mines reporting for the several months.
a/ Southern No. 1 totals not separately available for those months, due to the method of reporting.

Bituminous Coal — Cost Table 47. — Average Costs of Southern Subdivision 2 of Division I, by months November 1933 through January 1935.

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Total Average Cost	% of Total Cost	8 Mos. Composite a/ April - Nov. '34	Dec.	1935 Jan.	10 Mos. Total Apr. '34-Jan. '35 Average Costs	% of Total Cost
Mine Labor	$ .8832	$ .8911	$ .8748	$ .8671	$ .8681	$ .8763	56.82	$1.0865	$1.1020	$1.0922	$1.0884	59.81
Mine Supplies	.2134	.2307	.2047	.2029	.2038	.2104	13.64	.2401	.2519	.2374	.2408	13.23
Miscellaneous & Fixed Charges	.2872	.3047	.2782	.2700	.2539	.2773	17.98	.2979	.3179	.2732	.2973	16.33
Production Cost	1.3838	1.4265	1.3577	1.3400	1.3258	1.3640	88.44	1.6245	1.6718	1.6028	1.6265	89.37
Selling & Administration	.1746	.1866	.1750	.1921	.1675	.1784	11.56	.1897	.2180	.2023	.1934	10.63
Total Cost	1.5584	1.6131	1.5327	1.5321	1.4933	1.5424	100.00	1.8142	1.8898	1.8051	1.8199	100.00
Average No. of Days Worked	16.0	14.1	16.2	17.7	20.7	84.7		119.5	15.0	16.8	150.9	
No. of Mines Reporting	296	266	234	235	245	• 256		205	208	210	• 208	
Production Tons (000 omitted)	4,511	3,655	4,014	4,105	5,094	21,379		29,967	3,226	3,643	36,836	

• A simple average of the total number of mines reported for the several months.
a/ Southern No. 2 totals not separately available for the months April through November, due to the method of reporting.

Bituminous Coal — Cost Table 48. — Average Costs of Big Sandy - Elkhorn area of Southern Subdivision 2 (Division I) by months November 1933 through January 1935.

Mine Labor	1.0107	1.0414	1.0412	1.0176	1.0629	1.0340	61.51	1.2595	1.2968	1.2766	1.2636	65.61
Mine Supplies	.1874	.2169	.1857	.1787	.1800	.1884	11.20	.2034	.2218	.2084	.2051	10.65
Miscellaneous & Fixed Charges	.2648	.3315	.2945	.2505	.2317	.2701	16.06	.2601	.3394	.2663	.2662	13.82
Production Cost	1.4629	1.5898	1.5214	1.4468	1.4746	1.4925	88.77	1.7230	1.8580	1.7513	1.7349	90.08
Selling & Administration	.1786	.2017	.1921	.2024	.1762	.1888	11.23	.1856	.2467	.1995	.1911	9.92
Total Cost	1.6415	1.7915	1.7135	1.6492	1.6508	1.6813	100.00	1.9086	2.1047	1.9508	1.9260	100.00
Average No. of Days Worked	17.5	13.6	16.1	17.4	20.3	84.9		154.0	15.8	17.7	187.5	
No. of Mines Reporting	37	30	27	30	32	• 31		26	23	24	• 24	
Production Tons (000 omitted)	673	438	473	549	628	2,761		5,288	441	523	6,252	

• A simple average of the total number of mines reported for the several months.
a/ Southern No. 2 totals not separately available for the months April through November, due to the method of reporting.

Bituminous Coal — Cost Table 49. — Average Costs of Harlan area of Southern Subdivision 2 (Division I) by months November 1933 through January 1935.

Mine Labor	.8512	.8413	.8236	.8103	.8304	.8307	52.62	1.0857	1.0396	1.0087	1.0738	54.93
Mine Supplies	.2134	.2296	.2284	.2043	.2199	.2187	13.85	.3028	.2769	.2208	.2921	14.94
Miscellaneous & Fixed Charges	.3350	.3483	.3157	.2933	.2859	.3134	19.84	.4060	.3221	.2865	.3865	19.77
Production Cost	1.3996	1.4192	1.3677	1.3079	1.3362	1.3628	86.31	1.7945	1.6386	1.5160	1.7524	89.64
Selling & Administration	.2034	.2308	.2170	.2307	.2033	.2160	13.69	.1924	.2607	.2337	.2026	10.36
Total Cost	1.6030	1.6500	1.5847	1.5386	1.5395	1.5788	100.00	1.9869	1.8993	1.7497	1.9550	100.00
Average No. of Days Worked	16.0	13.5	15.5	18.7	20.7	84.4		136.8	16.2	19.5	172.5	
No. of Mines Reporting	26	24	24	22	23	• 24		8	8	8	8	
Production Tons (000 omitted)	448	348	465	455	508	2,224		1,500	161	190	1,851	

• A simple average of the total number of mines reported for the several months.
a/ Southern No. 2 totals not separately available for the months April through November, due to the method of reporting.

Bituminous Coal — Cost Table 50. — Average Costs of Hazard area of Southern Subdivision 2 (Division I) by months November 1933 through January 1935.

	(Average Costs per Ton) 1933 Nov.	1934 Dec.	1934 Jan.	1934 Feb.	1934 March	5 Mon. Total Average Cost	5 Mon. Total % of Total Cost	8 Mos. Composite a/ April - Nov. '34	1935 Dec.	1935 Jan.	10 Mos. Total Apr. '34-Jan. '35 Average Costs	10 Mos. Total Apr. '34-Jan. '35 % of Total Cost
Mine Labor	$ .9421	$.9340	$.8990	$.8889	$.9198	$ .9194	57.76	$1.1837	$1.1368	$1.1068	$1.1681	60.66
Mine Supplies	.2456	.2120	.1970	.1939	.2029	.2123	13.33	.2568	.2534	.2194	.2513	13.05
Miscellaneous & Fixed Charges	.2903	.2900	.2535	.2416	.2464	.2659	16.71	.3055	.2947	.2525	.2971	15.43
Production Cost	1.4780	1.4360	1.3495	1.3244	1.3691	1.3976	87.80	1.7460	1.6849	1.5787	1.7165	89.14
Selling & Administration	.1806	.2008	.2032	.2127	.1823	.1942	12.20	.2127	.2071	.1903	.2091	10.86
Total Cost	1.6586	1.6368	1.5527	1.5371	1.5514	1.5918	100.00	1.9587	1.8920	1.7690	1.9256	100.00
Average No. of Days Worked	18.0	14.1	14.8	16.8	19.3	79.0		96.8	14.5	17.5	128.8	
No. of Mines Reporting	34	30	22	23	26	• 27		28	24	25	• 26	
Production Tons (000 omitted)	335	298	227	245	334	1,439		1,796	260	324	2,380	

* A simple average of the total number of mines reported for the several months.
a/ Southern No. 2 totals not separately available for the months April through November, due to the method of reporting.

Bituminous Coal — Cost Table 51. — Average Costs of Kanawha area of Southern Subdivision 2 (Division I) by months November 1933 through January 1935.

Mine Labor	.8887	.9245	.9152	.8952	.8855	.9002	58.59	1.1234	1.1207	1.0943	1.1201	61.96
Mine Supplies	.2077	.2392	.2185	.2240	.2213	.2214	14.41	.2609	.2529	.2330	.2572	14.23
Miscellaneous & Fixed Charges	.2523	.2608	.2554	.2511	.2379	.2509	16.33	.2510	.2870	.2376	.2530	13.99
Production Cost	1.3487	1.4245	1.3891	1.3703	1.3447	1.3725	89.33	1.6353	1.6606	1.5649	1.6303	90.18
Selling & Administration	.1524	.1663	.1633	.1798	.1596	.1640	10.67	.1704	.2147	.1999	.1775	9.82
Total Cost	1.5011	1.5928	1.5524	1.5501	1.5043	1.5365	100.00	1.8057	1.8753	1.7648	1.8078	100.00
Average No. of Days Worked	17.1	15.5	15.8	17.9	20.7	87.0		144.3	16.2	18.3	178.8	
No. of Mines Reporting	46	44	36	38	36	• 40		44	48	47	• 47	
Production Tons (000 omitted)	907	708	679	753	891	3,938		8,122	933	1,059	10,114	

* A simple average of the total number of mines reported for the several months.
a/ Southern No. 2 totals not separately available for the months April through November, due to the method of reporting.

Bituminous Coal — Cost Table 52. — Average Costs of Logan area of Southern Subdivision 2 (Division I) by months November 1933 through January 1935.

Mine Labor	.7016	.6944	.6877	.6693	.6705	.6839	52.06	.8285	.8669	.8959	.8372	53.26
Mine Supplies	.1995	.2217	.1784	.1751	.1697	.1870	14.23	.2037	.2166	.2574	.2093	13.31
Miscellaneous & Fixed Charges	.2751	.2968	.2697	.2793	.2474	.2712	20.65	.3175	.3233	.2846	.3150	20.04
Production Cost	1.1762	1.2129	1.1358	1.1237	1.0876	1.1421	86.94	1.3497	1.4068	1.4379	1.3615	86.61
Selling & Administration	.1724	.1815	.1620	.1785	.1671	.1715	13.06	.2054	.2431	.2327	.2106	13.39
Total Cost	1.3486	1.3944	1.2978	1.3022	1.2547	1.3136	100.00	1.5551	1.6499	1.6706	1.5721	100.00
Average No. of Days Worked	16.9	14.6	16.9	17.4	21.7	87.5		89.7	13.2	15.8	118.7	
No. of Mines Reporting	40	38	37	34	40	• 38		34	36	38	• 36	
Production Tons (000 omitted)	939	775	928	830	1,210	4,682		6,363	564	656	7,583	

* A simple average of the total number of mines reported for the several months.
a/ Southern No. 2 totals not separataly available for the months April through November, due to the method of reporting.

Bituminous Coal — Cost Table 53. — Average Costs of Southern Appalachian area of Southern Subdivision 2 (Division I) by months November 1933 through January 1935.

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Total Average Cost	5 Mos. Total % of Total Cost	8 Mos. Composite a/ April - Nov. '34	1935 Dec.	1935 Jan.	10 Mos. Total Apr. '34-Jan. '35 Average Costs	10 Mos. Total Apr. '34-Jan. '35 % of Total Cost
(Average Costs per Ton)												
Mine Labor	$1.0698	$1.0767	$1.0456	$1.0178	$1.0485	$1.0495	61.50	$1.3299	$1.2501	$1.2385	$1.3114	64.06
Mine Supplies	.2517	.2566	.2213	.2273	.2520	.2409	14.12	.2937	.2712	.2586	.2874	14.04
Miscellaneous & Fixed Charges	.2401	.2576	.2280	.2257	.2197	.2327	13.63	.2623	.2489	.2400	.2584	12.62
Production Cost	1.5616	1.5909	1.4949	1.4708	1.5202	1.5231	89.25	1.8859	1.7702	1.7371	1.8572	90.72
Selling & Administration	.1985	.1979	.1657	.2006	.1600	.1834	10.75	.1898	.1951	.1866	.1900	9.28
Total Cost	1.7601	1.7888	1.6606	1.6714	1.6802	1.7065	100.00	2.0757	1.9653	1.9237	2.0472	100.00
Average No. of Days Worked	11.8	12.2	16.7	18.4	20.8	79.9		103.3	17.1	18.0	135.4	
No. of Mines Reporting	45	40	34	36	32	• 37		15	14	14	• 14	
Production Tons (000 omitted)	288	264	324	359	366	1,601		1,145	152	163	1,460	

• A simple average of the total number of mines reported for the several months.
a/ Southern No. 2 totals not separately available for the months April through November, due to the method of reporting.

Bituminous Coal — Cost Table 54. — Average Costs of Virginia area of Southern Subdivision 2 (Division I) by months November 1933 through January 1935.

(Average Costs per Ton)												
Mine Labor	.9504	.9446	.9450	.9468	.9492	.9474	57.68	1.1534	1.1651	1.1615	1.1555	58.85
Mine Supplies	.2151	.2241	.2169	.2189	.2186	.2186	13.31	.2436	.2644	.2656	.2482	12.64
Miscellaneous & Fixed Charges	.3408	.3342	.3029	.2948	.2740	.3070	18.69	.3499	.3320	.3194	.3447	17.55
Production Cost	1.5063	1.5029	1.4648	1.4605	1.4418	1.4730	89.68	1.7469	1.7615	1.7465	1.7484	89.04
Selling & Administration	.1847	.1802	.1663	.1817	.1424	.1695	10.32	.2238	.1845	.1818	.2152	10.96
Total Cost	1.6910	1.6831	1.6311	1.6422	1.5842	1.6425	100.00	1.9707	1.9460	1.9283	1.9636	100.00
Average No. of Days Worked	17.0	15.8	18.3	19.3	22.1	92.5		126.0	17.8	17.3	161.1	
No. of Mines Reporting	33	27	27	26	30	• 29		22	23	25	• 23	
Production Tons (000 omitted)	520	470	527	532	657	2,706		2,955	392	407	3,754	

• A simple average of the total number of mines reported for the several months.
a/ Southern No. 2 totals not separately available for the months April through November, due to the method of reporting.

Bituminous Coal — Cost Table 55. — Average Costs of Williamson area of Southern Subdivision 2 (Division I) by months November 1933 through January 1935.

(Average Costs per Ton)												
Mine Labor	.8473	.8727	.8585	.8266	.8353	.8471	54.49	1.0069	1.0492	1.0588	1.0157	56.11
Mine Supplies	.2460	.2568	.2121	.2156	.2149	.2279	14.67	.2617	.3132	.2395	.2645	14.61
Miscellaneous & Fixed Charges	.3406	.3422	.2963	.3124	.2970	.3163	20.34	.3584	.4009	.3497	.3615	19.97
Production Cost	1.4339	1.4717	1.3669	1.3546	1.3472	1.3913	89.50	1.6270	1.7633	1.6480	1.6417	90.69
Selling & Administration	.1556	.1599	.1586	.1776	.1640	.1631	10.50	.1654	.1839	.1808	.1686	9.31
Total Cost	1.5895	1.6316	1.5255	1.5322	1.5112	1.5544	100.00	1.7924	1.9472	1.8288	1.8103	100.00
Average No. of Days Worked	14.2	12.1	14.8	15.6	18.8	75.5		107.3	11.4	12.0	130.7	
No. of Mines Reporting	35	33	27	26	29	• 30		28	32	29	• 30	
Production Tons (000 omitted)	400	354	391	382	501	2,028		2,799	323	320	3,442	

• A simple average of the total number of mines reported for the several months.
a/ Southern No. 2 totals not separately available for the months April through November, due to the method of reporting.

Bituminous Coal. Cost Table 56. Average Costs of Western Kentucky Subdivision of Division I, a/ by months November 1933 through January 1934.

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	3 Mos. Total Average Cost	% of Total Cost
Mine Labor	.7268	.7082	.7065			.7132	59.3
Mine Supplies	.1900	.1783	.1619			.1761	14.7
Miscellaneous & Fixed Charges	.1646	.1706	.1603			.1652	13.7
Production Cost	1.0814	1.0571	1.0287			1.0545	87.7
Selling & Administration	.1450	.1539	.1422			.1472	12.3
Total Cost	1.2264	1.2110	1.1709			1.2017	100.0
Average No. of Days Worked	13.9	15.1	16.8			45.8	
No. of Mines Reporting	27	29	24			* 27	
Production Tons (000 omitted)	415	496	480			1,391	

* A simple average of the total number of mines reporting for the several months.
a/ Reports were submitted from Western Kentucky for only the months shown.

Bituminous Coal — Cost Table 57

Average Costs of Division II 1/ deep and stripping mines combined by months, November 1933 through January 1935.

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Average Cost	Total % of Total Cost	1934 April	May	June	July	August	Sept.	October	Nov.	1934 Dec.	1935 Jan.	10 Mos. Total Aver. '34-Jan. '35 Average Cost	% of Total Cost
Mine Labor	$ .7325a/	$ .7444a/	$ .7403	$ .7264	$ 7070	$ .7299	54.26	$ .8192	$ .8444	$ .8133	$ .8507	$ .8347	$ .8471	$ .8309	$ .8396	$ .8137	$ .8143	$ .8291	53.67
Mine Supplies	.2692a/	.2533a/	.2372	.2371	.2408	.2471	18.36	.3176	.3278	.3291	.3137	.3016	.2966	.3010	.2906	.2702	.2575	.2944	19.06
Miscellaneous & Fixed Charges	.2421a/	.2279a/	.2250	.2318	.2301	.2311	17.18	.2827	.2775	.2785	.2671	.2638	.2490	.2429	.2500	.2259	.2238	.2504	16.21
Production Cost	1.2438a/	1.2256a/	1.2025	1.1953	1.1779	1.2081	89.80	1.4195	1.4497	1.4209	1.4315	1.4001	1.3927	1.3748	1.3802	1.3098	1.2936	1.3739	88.94
Selling & Administration	.1373a/	.1415a/	.1372	.1365	.1337	.1372	10.20	.1946	.1962	.2091	.1969	.1941	.1716	.1560	.1561	.1552	.1410	.1709	11.06
Total Cost	1.3811a/	1.3671a/	1.3397	1.3318	1.3116	1.3453	100.00	1.6141	1.6459	1.6300	1.6274	1.5942	1.5643	1.5308	1.5363	1.4650	1.4346	1.5448	100.00
Average No. of Days Worked	15.9	16.7	17.5	16.3	17.4	83.8		11.8	11.2	11.8	12.3	13.7	14.6	15.9	15.6	19.4	20.4	146.4	
No. of Mines Reporting	161	178	181	164	161	170*		145	131	121	124	139	158	161	166	169	175	149*	
Production, Tons (000 omitted)	4,142a/	4,458a/	4,721	4,368	4,758	22,447		2,698	2,393	2,441	2,563	3,099	3,599	3,993	3,957	5,036	5,376	35,155	

* A simple average of the total number of mines reported for the several months.
1/ Including Indiana and Illinois both deep and strip mines.
a/ Excluding Iowa, whose reports were available for November and December only. With Iowa included, the averages for these two months appear as follows:

	November 1933	December 1933
Mine Labor	$ .7662	$ .7766
Mine Supplies	.2689	.2521
Miscellaneous & Fixed Charges	.2464	.2310
Production Cost	1.2815	1.2597
Selling & Administration	.1384	.1416
Total Cost	1.4199	1.4013

Bituminous Coal — Cost Table 58

Average Costs of Division II, deep mines only by months, November 1933 through January 1935

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Average Cost	Total % of Total Cost	1934 April	May	June	July	August	Sept.	October	Nov.	1934 Dec.	1935 Jan.	10 Mos. Total Aver. '34-Jan. '35 Average Cost	% of Total Cost
Mine Labor	$ .8375b/	$ .8453b/	$ .8444	$ .8335	$ .8161	$ .8358	58.99	$ .9798	$ .9978	$ .9689	$ .9682	$ .9339	$ .9443	$ .9367	$ .9523	$ .9183	$ .9112	$ .9425	58.33
Mine Supplies	.2662b/	.2477b/	.2337	.2337	.2355	.2429	17.14	.3184	.3231	.3315	.2982	.2813	.2866	.2830	.2769	.2536	.2413	.2808	17.38
Miscellaneous & Fixed Charges	.2148b/	.2031b/	.2031	.2095	.2053	.2070	14.60	.2628	.2575	.2496	.2394	.2351	.2249	.2203	.2308	.2126	.2028	.2280	14.11
Production Cost	1.3185b/	1.2961b/	1.2812	1.2767	1.2569	1.2857	90.73	1.5610	1.5784	1.5300	1.5058	1.4503	1.4558	1.4420	1.4600	1.3845	1.3553	1.4513	89.82
Selling & Administration	.1305b/	.1344b/	.1287	.1331	.1301	.1313	9.27	.1972	.1967	.2104	.1953	.1742	.1654	.1493	.1503	.1482	.1344	.1644	10.18
Total Cost	1.4490b/	1.4337b/	1.4099	1.4098	1.3870	1.4170	100.00	1.7582	1.7751	1.7404	1.7011	1.6245	1.6212	1.5913	1.6103	1.5327	1.4897	1.6157	100.00
Average No. of Days Worked	16.3	17.0	17.8	16.4	17.4	84.8		11.2	10.9	11.7	12.3	13.8	14.8	16.1	15.5	19.5	20.6	146.2	
No. of Mines Reporting	126	146	147	132	127	136*		117	103	92	95	110	126	129	133	137	142	117*	
Production, Tons (000 omitted)	3,229b/	3,505b/	3,716	3,407	3,678	17,538		1,908	1,732	1,745	1,905	2,410	2,853	3,111	3,073	3,990	4,308	27,035	

* A simple average of the total number of mines reported for the several months.
b/ Including Iowa in the total of deep mines for Division II, the averages for November and December appear as follows:

	November 1933	December 1933
Mine Labor	$ .8737	$ .8827
Mine Supplies	.2648	.2465
Miscellaneous & Fixed Charges	.2209	.2084
Production Cost	1.3594	1.3376
Selling & Administration	.1321	.1351
Total Cost	1.4915	1.4727

Bituminous Coal — Cost Table 59

Average costs of Division II, stripping mines only by months, November 1933 through January 1935

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Average Cost	Total % of Total Cost	1934 April	May	June	July	August	Sept.	October	Nov.	1934 Dec.	1935 Jan.	10 Mos. Total Aver. '34-Jan. '35 Average Cost	% of Total Cost
Mine Labor	$ .3613a/	$ .3605	$ .3551	$ .3467	$ .3358	$ .3514	32.27	$ .4307	$ .4420	$ .4733	$ .5101	$ .4873	$ .4753	$ .4508	$ .4482	$ .4147	$ .4238	$ .4517	34.52
Mine Supplies	.2800a/	.2741	.2501	.2490	.2590	.2621	24.06	.3158	.3403	.3230	.3588	.3728	.3347	.3646	.3379	.3337	.3228	.3394	25.93
Miscellaneous & Fixed Charges	.3383a/	.3194	.3061	.3109	.3142	.3174	29.15	.3308	.3301	.3509	.3473	.3641	.3416	.3224	.3168	.2764	.3085	.3253	24.85
Production Cost	.9796c/	.9540	.9113	.9066	.9090	.9309	85.48	1.0773	1.1124	1.1472	1.2162	1.2242	1.1516	1.1378	1.1029	1.0248	1.0651	1.1164	85.30
Selling & Administration	.1614a/	.1673	.1683	.1489	.1459	.1581	14.52	.1882	.1988	.2063	.1978	.2040	.1951	.1799	.1761	.1820	.1675	.1924	14.70
Total Cost	1.1410a/	1.1213	1.0796	1.0555	1.0549	1.0890	100.00	1.2655	1.3072	1.3535	1.4140	1.4282	1.3467	1.3177	1.2790	1.2068	1.2226	1.3088	100.00
Average No. of Days Worked	14.7	16.0	16.4	16.0	17.4	80.5		13.4	12.0	12.0	12.4	13.1	13.8	15.4	16.0	19.1	19.9	147.2	
No. of Mines Reporting	35	32	34	32	34	34*		31	28	29	29	29	32	32	33	32	33	32*	
Production, Tons (000 omitted)	913a/	950	1,005	961	1,080	4,909		789	661	696	657	689	746	882	884	1,046	1,069	8,119	

* A simple average of the total number of mines reported for the several months.
a/ Iowa reported strip mines in November only. If they were included in the November total for the averages would appear as follows:

	November 1933
Mine Labor	$ .3722
Mine Supplies	.2836
Miscellaneous & Fixed Charges	.3403
Production Cost	.9961
Selling & Administration	.1616
Total Cost	1.1577

Bituminous Coal — Cost Table 60 — Average costs of Indiana subdivision of Division II, deep and stripping mines combined, by months, November 1933 through January 1935.

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Average Cost	Total % of Total Cost	1934 April	May	June	July	August	Sept.	October	Nov.	1934 Dec	1935 Jan.	10 Mos. Total Apr. '34–Jan. '35 Average Cost	% of Total Cost
Mine Labor	$ .6398	$ .6125	$ .6075	$ .5971	$ .5690	$ .6049	47.26	$ .7266	$ .7675	$ .7640	$ .7987	$ .7784	$ .7409	$ .7074	$ .6878	$ .6583	$ .6635	$ .7191	47.30
Mine Supplies	.2868	.2854	.2538	.2563	.2660	.2698	21.08	.3618	.3877	.3886	.3621	.3668	.3497	.3269	.3130	.3231	.2806	.3388	22.29
Miscellaneous & Fixed Charges	.2659	.2661	.2612	.2676	.2667	.2655	20.74	.3078	.3165	.3319	.3136	.3231	.3032	.2839	.2838	.2509	.2666	.2928	19.26
Production Cost	1.1925	1.1640	1.1225	1.1210	1.1017	1.1402	89.08	1.3962	1.4717	1.4845	1.4744	1.4683	1.3938	1.3182	1.2846	1.2323	1.2107	1.3507	88.85
Selling & Administration	.1427	.1490	.1418	.1330	.1328	.1398	10.92	.1730	.1670	.1817	.1740	.2253	.1623	.1634	.1529	.1673	.1512	.1696	11.15
Total Cost	1.3352	1.3130	1.2643	1.2540	1.2345	1.2800	100.00	1.5692	1.6387	1.6662	1.6484	1.6936	1.5561	1.4816	1.4375	1.3996	1.3619	1.5203	100.00
Average No. of Days Worked	16.9	16.9	17.1	16.9	15.2	87.1		13.6	11.6	11.5	12.5	13.5	14.1	16.5	16.3	19.2	20.1	148.5	
No. of Mines Reporting	59	53	55	54	51	54*		49	44	44	42	46	47	46	46	47	48	46*	
Production, Tons (000 omitted)	1,226	1,159	1,187	1,145	1,267	5,984		815	663	673	661	775	844	999	1,017	1,177	1,268	8,892	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal — Cost Table 61 — Average costs of Indiana subdivision of Division II, deep mines only, by months, November 1933 through January 1935.

Mine Labor	$ .7865	$ .7628	$ .7511	$ .7400	$ .7228	$ .7530	54.31	$ .8945	$ .9284	$ .9538	$ .9360	$ .9103	$ .8702	$ .8373	$ .8360	$ .8080	$ .7854	$ .8625	53.73
Mine Supplies	.2636	.2929	.2613	.2638	.2772	.2759	19.89	.3763	.3904	.4284	.3360	.3081	.3360	.3168	.2970	.3161	.2587	.3266	20.35
Miscellaneous & Fixed Charges	.2236	.2213	.2276	.2356	.2228	.2261	16.30	.2660	.2839	.2870	.2736	.2665	.2675	.2539	.2587	.2493	.2330	.2602	16.21
Production Cost	1.2937	1.2770	1.2400	1.2394	1.2228	1.2550	90.50	1.5368	1.6027	1.6692	1.5456	1.4849	1.4737	1.4080	1.3917	1.3734	1.2771	1.4493	90.29
Selling & Administration	.1319	.1372	.1265	.1311	.1321	.1317	9.50	.1572	.1619	.1586	.1584	.1546	.1571	.1596	.1507	.1629	.1444	.1559	9.71
Total Cost	1.4256	1.4142	1.3665	1.3705	1.3549	1.3867	100.00	1.6940	1.7646	1.8278	1.7040	1.6395	1.6308	1.5676	1.5424	1.5363	1.4215	1.6052	100.00
Average No. of Days Worked	18.8	18.3	18.8	18.4	20.7	94.9		14.7	12.8	12.7	13.8	15.1	15.4	18.5	17.7	20.2	21.6	162.4	
No. of Mines Reporting	38	35	35	35	31	35*		31	29	29	27	31	30	29	30	29	30	29*	
Production, Tons (000 omitted)	794	727	747	718	757	3,743		470	412	390	416	505	541	641	638	731	827	5,571	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal — Cost Table 62 — Average costs of Indiana subdivision of Division II, stripping mines only, by months, November 1933 through January 1935.

Mine Labor	$ .3698	$ .3594	$ .3638	$ .3565	$ .3408	$ .3575	32.45	$ .4980	$ .5035	$ .5022	$ .5654	$ .5315	$ .5095	$ .4756	$ .4388	$ .4124	$ .4349	$ .4785	34.73
Mine Supplies	.2926	.2727	.2413	.2436	.2496	.2596	23.56	.3419	.3832	.3336	.4068	.4768	.3741	.3449	.3399	.3345	.3216	.3593	26.08
Miscellaneous & Fixed Charges	.3438	.3415	.3172	.3214	.3318	.3312	30.07	.3648	.3701	.3939	.3817	.4290	.3672	.3375	.3259	.2539	.3297	.3474	25.21
Production Cost	1.0062	.9736	.9223	.9215	.9222	.9483	86.08	1.2047	1.2568	1.2297	1.3535	1.4373	1.2508	1.1580	1.1046	1.0008	1.0862	1.1852	86.02
Selling & Administration	.1627	.1690	.1674	.1364	.1340	.1534	13.92	.1944	.1754	.2137	.2002	.3577	.1718	.1702	.1567	.1745	.1639	.1926	13.98
Total Cost	1.1689	1.1426	1.0897	1.0579	1.0562	1.1017	100.00	1.3991	1.4322	1.4434	1.5537	1.7950	1.4226	1.3282	1.2613	1.1753	1.2501	1.3778	100.00
Average No. of Days Worked	14.3	15.1	14.8	14.9	17.3	76.5		12.3	10.0	10.0	10.0	11.4	12.3	13.9	14.3	17.7	17.8	129.7	
No. of Mines Reporting	21	18	20	19	20	19*		18	15	15	15	15	17	17	18	18	18	17*	
Production, Tons (000 omitted)	432	432	440	427	510	2,241		345	251	283	245	270	302	359	379	446	441	3,321	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal — Cost Table 63 — Average costs of Brazil-Clinton area of Indiana subdivision (Division II), deep and stripping mines combined, by months, November 1933 through January 1935

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Average Cost	Total % of Total Cost	1934 April	May	June	July	August	Sept.	October	Nov.	Dec.	1935 Jan.	10 Mos. Total Apr. '34–Jan. '35 Average Cost	% of Total Cost
Mine Labor	$ .8077	$ .7789	$ .7717	$ .7642	$ .7331	$ .7728	51.79	$ .9146	$ .8888	$ .9259	$ .9270	$ .9234	$ .9151	$ .8803	$ .8794	$ .8664	$ .8712	$ .8966	52.12
Mine Supplies	.2705	.2901	.2557	.2426	.2657	.2655	17.79	.3195	.3419	.3166	.3441	.3023	.3217	.3096	.2934	.2843	.2548	.3056	17.76
Miscellaneous & Fixed Charges	.2981	.3155	.3064	.3184	.3431	.3154	21.13	.3620	.3699	.3820	.3945	.3741	.3730	.3519	.3587	.2709	.3648	.3576	20.78
Production Cost	1.3763	1.3845	1.3338	1.3252	1.3419	1.3537	90.71	1.5961	1.6006	1.6245	1.6656	1.5998	1.6098	1.5418	1.5315	1.4216	1.4908	1.5598	90.66
Selling & Administration	.1451	.1366	.1353	.1415	.1334	.1385	9.29	.1583	.1583	.1687	.1822	.1616	.1596	.1542	.1563	.1634	.1534	.1608	9.34
Total Cost	1.5214	1.5211	1.4691	1.4667	1.4753	1.4922	100.00	1.7544	1.7589	1.7932	1.8478	1.7614	1.7694	1.6960	1.6878	1.5850	1.6442	1.7206	100.00
Average No. of Days Worked	17.5	17.9	16.5	16.2	17.2	85.6		14.5	13.4	12.4	13.0	15.2	14.3	16.8	15.4	18.0	20.0	153.0	
No. of Mines Reporting	22	18	19	18	18	19*		16	15	15	13	15	15	14	14	14	12	14*	
Production, Tons (000 omitted)	359	321	318	290	293	1,581		223	206	196	175	228	220	244	247	265	288	2,292	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal — Cost Table 64 — Average costs of Linton-Sullivan area of Indiana subdivision (Division II), deep and stripping mines combined, by months, November 1933 through January 1935

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Average Cost	Total % of Total Cost	1934 April	May	June	July	August	Sept.	October	Nov.	Dec.	1935 Jan.	10 Mos. Total Apr. '34–Jan. '35 Average Cost	% of Total Cost
Mine Labor	$ .6471	$ .6198	$ .5930	$ .5960	$ .5782	$ .6059	47.61	$ .6880	$ .7325	$ .7881	$ .7743	$ .7564	$ .7392	$ .6985	$ .7040	$ .6810	$ .6854	$ .7162	46.74
Mine Supplies	.2785	.2898	.2401	.2519	.2462	.2603	20.45	.3486	.3776	.4020	.3657	.4189	.3555	.3314	.3336	.3530	.2963	.3506	22.88
Miscellaneous & Fixed Charges	.2613	.2587	.2539	.2545	.2528	.2561	20.12	.2999	.3048	.3263	.3072	.3308	.2894	.2677	.2714	.2593	.2193	.2789	18.20
Production Cost	1.1869	1.1683	1.0870	1.1024	1.0772	1.1223	88.18	1.3365	1.4149	1.5164	1.4472	1.5061	1.3841	1.2979	1.3090	1.2933	1.2010	1.3457	87.82
Selling & Administration	.1406	.1569	.1680	.1397	.1468	.1503	11.82	.1829	.1879	.1923	.1841	.3208	.1758	.1652	.1623	.1779	.1630	.1866	12.18
Total Cost	1.3275	1.3252	1.2550	1.2421	1.2240	1.2726	100.00	1.5194	1.6028	1.7087	1.6313	1.8269	1.5599	1.4631	1.4713	1.4712	1.3640	1.5323	100.00
Average No. of Days Worked	16.6	16.0	15.0	17.6	19.8	85.0		13.1	11.0	10.2	11.6	12.8	14.5	16.7	15.9	18.7	19.6	144.1	
No. of Mines Reporting	29	27	28	28	25	27*		24	21	20	21	23	24	24	25	25	26	24*	
Production, Tons (000 omitted)	536	489	558	541	593	2,717		330	270	234	287	331	391	475	462	537	589	3,906	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal — Cost Table 65 — Average costs of Princeton-Ayrshire area of Indiana subdivision (Division II), deep and stripping mines combined, by months, November 1933 through January 1935

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Average Cost	Total % of Total Cost	1934 April	May	June	July	August	Sept.	October	Nov.	Dec.	1935 Jan.	10 Mos. Total Apr. '34–Jan. '35 Average Cost	% of Total Cost
Mine Labor	$ .4459	$ .4490	$ .4665	$ .4444	$ .4284	$ .4461	40.82	$ .6157	$ .6840	$ .6099	$ .7210	$ .6586	$ .5800	$ .5715	$ .5102	$ .4790	$ .4777	$ .5723	42.95
Mine Supplies	.3177	.2748	.2765	.2766	.2973	.2889	26.44	.4141	.4529	.4337	.3728	.3552	.3662	.3342	.2979	.3076	.2759	.3501	26.27
Miscellaneous & Fixed Charges	.2385	.2310	.2278	.2432	.2297	.2339	21.39	.2719	.2745	.2968	.2514	.2572	.2608	.2522	.2422	.2251	.2656	.2578	19.34
Production Cost	1.0021	.9548	.9708	.9642	.9554	.9689	88.65	1.3017	1.4114	1.3404	1.3452	1.2710	1.2070	1.1579	1.0503	1.0117	1.0192	1.1802	88.56
Selling & Administration	.1435	.1495	.1018	.1137	.1105	.1240	11.35	.1729	.1465	.1821	.1521	.1460	.1423	.1685	.1363	.1548	.1317	.1524	11.44
Total Cost	1.1456	1.1043	1.0726	1.0779	1.0659	1.0929	100.00	1.4746	1.5579	1.5225	1.4973	1.4170	1.3493	1.3264	1.1866	1.1665	1.1509	1.3326	100.00
Average No. of Days Worked	16.8	17.5	16.2	16.5	20.0	87.0		13.6	10.6	12.2	12.1	13.1	13.3	16.1	17.7	20.9	21.1	150.7	
No. of Mines Reporting	8	8	8	8	8	8*		9	8	9	8	8	8	8	8	8	8	8*	
Production, Tons (000 omitted)	331	349	312	314	381	1,687		262	187	242	199	216	233	281	308	375	392	2,695	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal — Cost Table 66

Average costs of Illinois subdivision of Division II, deep and stripping mines combined, by months, November 1933 through January 1935.

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Average Cost	Total % of Total Cost	1934 April	May	June	July	August	Sept.	October	Nov.	1934 Dec.	1935 Jan.	10 Mos. Total Apr. '34-Jan. '35 Average Cost	% of Total Cost
Mine Labor	$ .7714	$ .7908	$ .7848	$ .7723	$ .7571	$ .7754	56.63	$ .8593	$ .8738	$ .8320	$ .8687	$ .8534	$ .8796	$ .8721	$ .8922	$ .8611	$ .8609	$ .8663	55.78
Mine Supplies	.2619	.2420	.2317	.2302	.2317	.2388	17.45	.2985	.3049	.3065	.2969	.2799	.2803	.2924	.2828	.2541	.2504	.2793	17.98
Miscellaneous & Fixed Charges	.2320	.2145	.2129	.2192	.2167	.2186	15.97	.2718	.2626	.2582	.2510	.2440	.2325	.2292	.2383	.2182	.2105	.2362	15.21
Production Cost	1.2653	1.2473	1.2294	1.2217	1.2055	1.2328	90.05	1.4296	1.4413	1.3967	1.4166	1.3773	1.3924	1.3937	1.4133	1.3334	1.3218	1.3818	88.97
Selling & Administration	.1351	.1388	.1356	.1378	.1341	.1362	9.95	.2039	.2074	.2196	.2035	.1838	.1744	.1536	.1572	.1516	.1379	.1713	11.03
Total Cost	1.4004	1.3861	1.3650	1.3595	1.3396	1.3690	100.00	1.6335	1.6487	1.6163	1.6201	1.5611	1.5668	1.5473	1.5705	1.4850	1.4597	1.5531	100.00
Average No. of Days Worked	15.5	16.7	17.6	16.1	16.9	82.7		11.1	11.0	11.9	12.4	13.7	14.8	15.7	15.4	19.5	20.5	146.0	
No. of Mines Reporting	101	125	126	110	110	114*		99	87	77	82	93	111	115	118	122	129	103*	
Production, Tons (000 omitted)	2,916	3,298	3,534	3,223	3,491	16,462		1,883	1,730	1,768	1,902	2,323	2,755	2,993	2,940	3,860	4,108	26,262	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal — Cost Table 67

Average costs of Illinois subdivision of Division II, deep mines only, by months, November 1933 through January 1935.

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Average Cost	Total % of Total Cost	1934 April	May	June	July	August	Sept.	October	Nov.	1934 Dec.	1935 Jan.	10 Mos. Total Apr. '34-Jan. '35 Average Cost	% of Total Cost
Mine Labor	$ .8540	$ .8707	$ .8678	$ .8585	$ .8403	$ .8583	60.22	$1.0078	$1.0195	$ .9475	$ .9772	$ .9402	$ .9616	$ .9650	$ .9827	$ .9430	$ .9411	$ .9632	59.51
Mine Supplies	.2606	.2358	.2269	.2256	.2247	.2339	16.41	.2994	.3021	.3036	.2876	.2742	.2750	.2742	.2717	.2396	.2372	.2689	16.62
Miscellaneous & Fixed Charges	.2120	.1984	.1968	.2025	.2008	.2018	14.16	.2618	.2493	.2389	.2299	.2267	.2149	.2116	.2235	.2043	.1956	.2197	13.57
Production Cost	1.3266	1.3049	1.2915	1.2866	1.2658	1.2940	90.79	1.5690	1.5709	1.4900	1.4947	1.4411	1.4515	1.4508	1.4779	1.3869	1.3739	1.4518	89.70
Selling & Administration	.1300	.1339	.1293	.1336	.1295	.1312	9.21	.2102	.2075	.2252	.2055	.1795	.1674	.1466	.1502	.1450	.1320	.1666	10.30
Total Cost	1.4566	1.4388	1.4208	1.4202	1.3953	1.4252	100.00	1.7792	1.7784	1.7152	1.7002	1.6206	1.6189	1.5974	1.6281	1.5319	1.5059	1.6184	100.00
Average No. of Days Worked	15.6	16.6	17.5	15.9	16.8	82.5		10.4	10.4	11.4	11.9	13.5	14.7	15.5	15.0	19.4	20.3	142.6	
No. of Mines Reporting	88	111	112	97	96	100*		86	74	63	68	79	96	100	103	108	112	88*	
Production, Tons (000 omitted)	2,435	2,780	2,969	2,689	2,921	13,794		1,439	1,320	1,355	1,489	1,905	2,312	2,470	2,435	3,259	3,480	21,464	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal — Cost Table 68

Average costs of Illinois subdivision of Division II, stripping mines only, by months, November 1933 through January 1935.

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Average Cost	Total % of Total Cost	1934 April	May	June	July	August	Sept.	October	Nov.	1934 Dec.	1935 Jan.	10 Mos. Total Apr. '34-Jan. '35 Average Cost	% of Total Cost
Mine Labor	$ .3537	$ .3615	$ .3483	$ .3388	$ .3312	$ .3463	32.11	$ .3784	$ .4043	$ .4534	$ .4773	$ .4588	$ .4519	$ .4338	$ .4553	$ .4164	$ .4160	$ .4332	34.36
Mine Supplies	.2688	.2752	.2570	.2533	.2676	.2642	24.50	.2956	.3140	.3158	.3305	.3057	.3078	.3782	.3363	.3331	.3237	.3256	25.82
Miscellaneous & Fixed Charges	.3333	.3010	.2974	.3025	.2983	.3057	28.35	.3044	.3056	.3215	.3270	.3224	.3241	.3120	.3100	.2931	.2935	.3099	24.57
Production Cost	.9558	.9377	.9027	.8946	.8971	.9162	84.96	.9784	1.0239	1.0907	1.1348	1.0869	1.0838	1.1240	1.1016	1.0426	1.0332	1.0687	84.75
Selling & Administration	.1602	.1657	.1691	.1589	.1567	.1622	15.04	.1835	.2067	.2013	.1964	.2036	.2112	.1865	.1908	.1876	.1702	.1922	15.25
Total Cost	1.1160	1.1034	1.0718	1.0535	1.0538	1.0784	100.00	1.1619	1.2306	1.2920	1.3312	1.2905	1.2950	1.3105	1.2924	1.2302	1.2034	1.2609	100.00
Average No. of Days Worked	15.1	16.9	18.0	16.9	17.5	84.3		14.5	13.7	13.9	14.5	14.5	15.0	16.7	17.5	20.3	21.7	159.9	
No. of Mines Reporting	13	14	14	13	14	14*		13	13	14	14	14	15	15	15	14	15	15*	
Production, Tons (000 omitted)	482	518	564	534	570	2,668		444	410	413	413	419	443	523	505	601	627	4,798	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal — Cost Table 69 — Average costs of Northern Illinois area of Illinois subdivision (Division II), deep and stripping mines combined, by months, November 1933 through January 1935.

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Average Cost	Total % of Total Cost	1934 April	May	June	July	August	Sept.	October	Nov.	1934 Dec.	1935 Jan.	10 Mos. Total Apr. '34–Jan. '35 Average Cost	% of Total Cost
Mine Labor	$ .6422	$ .6407	$ .6450	$ .6322	$ .5621	$ .6243	45.38	$ .5879	$ .6079	$ .6457	$ .6280	$ .7101	$ .7508	$ .8916	$ .9406	$ .9471	$ .9362	$ .8001	46.39
Mine Supplies	.3053	.3344	.2488	.2529	.2760	.2819	20.49	.3483	.3890	.3539	.4081	.4373	.3649	.5295	.3908	.3502	.3087	.3869	22.43
Miscellaneous & Fixed Charges	.3422	.3444	.3316	.3231	.3249	.3329	24.19	.3539	.3560	.3593	.3623	.3677	.3533	.3398	.3440	.3349	.3228	.3460	20.05
Production Cost	1.2897	1.3195	1.2254	1.2082	1.1630	1.2391	90.06	1.2901	1.3529	1.3589	1.3984	1.5151	1.4690	1.7609	1.6754	1.6322	1.5677	1.5330	88.87
Selling & Administration	.1411	.1421	.1316	.1371	.1323	.1367	9.94	.1644	.1923	.1824	.1730	.1905	.1861	.1758	.1956	.2369	.1973	.1919	11.13
Total Cost	1.4308	1.4616	1.3570	1.3453	1.2953	1.3758	100.00	1.4545	1.5452	1.5413	1.5714	1.7056	1.6551	1.9367	1.8710	1.8691	1.7650	1.7249	100.00
Average No. of Days Worked	22.2	23.9	25.4	23.5	26.3		120.2	21.2	17.2	20.2	22.5	20.2	21.6	25.1	22.9	24.4	25.1		220.4	
No. of Mines Reporting	9	8	9	8	7		8*	6	5	3	3	5	7	10	10	10	12		7*	
Production, Tons (000 omitted)	179	167	196	188	184		914	140	113	108	118	121	142	199	186	208	231		1,566	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal — Cost Table 70 — Average costs of Central-Peoria area of Illinois subdivision (Division II), deep and stripping mines combined, by months, November 1933 through January 1935.

Mine Labor	$ .8478	$ .8721	$ .8536	$ .8365	$ .8009	$ .8430	57.25	$ .9606	$ .9521	$ .8559	$ .9101	$ .9426	$ .9650	$ .8642	$ .8358	$ .8848	$ .8376	$ .8919	56.14
Mine Supplies	.2423	.2091	.1797	.2051	.2169	.2094	14.23	.2794	.2717	.2723	.2547	.2462	.2629	.2630	.2602	.2501	.2357	.2577	16.22
Miscellaneous & Fixed Charges	.2339	.2231	.2288	.2264	.2217	.2267	15.39	.2833	.2705	.2664	.2622	.2532	.2568	.2356	.2484	.2201	.2219	.2476	15.59
Production Cost	1.3240	1.3043	1.2621	1.2680	1.2395	1.2791	86.87	1.5233	1.4943	1.3946	1.4270	1.4420	1.4847	1.3628	1.3444	1.3350	1.2952	1.3972	87.95
Selling & Administration	.2065	.2139	.1991	.1734	.1688	.1933	13.13	.2039	.2001	.1895	.1976	.1899	.2424	.1800	.1849	.1827	.1672	.1915	12.05
Total Cost	1.5305	1.5192	1.4612	1.4414	1.4083	1.4724	100.00	1.7272	1.6944	1.5841	1.6246	1.6319	1.7271	1.5428	1.5293	1.5177	1.4624	1.5887	100.00
Average No. of Days Worked	17.2	18.5	20.8	17.6	19.5		93.7	13.9	12.4	15.2	15.5	15.3	16.1	18.4	18.6	22.1	23.5		171.0	
No. of Mines Reporting	15	18	18	14	14		16*	14	12	8	8	11	13	14	16	15	15		13*	
Production, Tons, (000 omitted)	289	327	353	275	307		1,551	220	199	170	188	212	234	279	279	331	365		2,477	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal — Cost Table 71 — Average costs of Central-All Others area of Illinois subdivision (Division II), deep and stripping mines combined, by months, November 1933 through January 1935.

Mine Labor	$ .7840	$ .8108	$ .8139	$ .7867	$ .7807	$ .7961	58.33	$ .9382	$ .8857	$ .8321	$ .8499	$ .8105	$ .8808	$ .8600	$ .8930	$ .8697	$ .8649	$ .8688	57.40
Mine Supplies	.2895	.2579	.2643	.2512	.2492	.2621	19.20	.3199	.3054	.3115	.2824	.2843	.3103	.2916	.2854	.2662	.2656	.2884	19.06
Miscellaneous & Fixed Charges	.2052	.1823	.1857	.1936	.1869	.1903	13.94	.2640	.2282	.2263	.2068	.2156	.2034	.1897	.1935	.1768	.1761	.2019	13.34
Production Cost	1.2787	1.2510	1.2639	1.2315	1.2168	1.2485	91.47	1.5221	1.4193	1.3699	1.3391	1.3104	1.3945	1.3413	1.3719	1.3127	1.3066	1.3591	89.80
Selling & Administration	.1117	.1117	.1150	.1252	.1196	.1164	8.53	.2110	.2180	.2080	.1939	.1732	.1516	.1289	.1335	.1167	.1144	.1543	10.20
Total Cost	1.3904	1.3627	1.3789	1.3567	1.3364	1.3649	100.00	1.7331	1.6373	1.5779	1.5330	1.4836	1.5461	1.4702	1.5054	1.4314	1.4210	1.5134	100.00
Average No. of Days Worked	17.7	19.7	20.1	17.8	18.7		93.4	12.3	12.4	13.6	14.9	15.5	15.6	17.1	16.6	20.6	21.5		160.1	
No. of Mines Reporting	26	30	30	25	25		27*	25	21	18	19	20	27	27	28	28	28		24*	
Production, Tons, (000 omitted)	871	1,029	1,062	896	954		4,812	549	471	485	522	638	750	830	825	1,038	1,067		7,175	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal — Cost Table 72

Average costs of Belleville area of Illinois subdivision (Division II), deep and stripping mines combined, by months, November 1933 through January 1935.

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Average Cost	Total % of Total Cost	1934 April	May	June	July	August	Sept.	October	Nov.	Dec.	1935 Jan.	10 Mos. Total Apr. '34–Jan. '35 Average Cost	% of Total Cost
Mine Labor	$ .6575	$ .6963	$ .7011	$ .6844	$ .6645	$ .6786	56.97	$ .6653	$ .6946	$ .7207	$ .7543	$ .7467	$ .7739	$ .7571	$ .7819	$ .7848	$ .7708	$ .7500	54.61
Mine Supplies	.2216	.2044	.2133	.1941	.1931	.2044	17.16	.2530	.2839	.2848	.2983	.2447	.2353	.2441	.2475	.2195	.2209	.2462	17.92
Miscellaneous & Fixed Charges	.2080	.1895	.1774	.1950	.1917	.1910	16.04	.2372	.2358	.2561	.2604	.2394	.2147	.2171	.2160	.2010	.1872	.2199	16.01
Production Cost	1.0874	1.0902	1.0918	1.0535	1.0493	1.0740	90.17	1.1555	1.2143	1.2616	1.3130	1.2308	1.2239	1.2183	1.2454	1.1853	1.1789	1.2161	88.54
Selling & Administration	.1148	.1081	.1140	.1240	.1241	.1171	9.83	.1803	.1840	.1855	.1820	.1701	.1537	.1475	.1432	.1530	.1285	.1574	11.46
Total Cost	1.2022	1.1983	1.2058	1.1775	1.1734	1.1911	100.00	1.3358	1.3983	1.4471	1.4950	1.4009	1.3776	1.3658	1.3886	1.3383	1.3074	1.3735	100.00
Average No. of Days Worked	15.6	16.3	17.2	16.9	17.2	83.3		10.8	11.8	11.3	11.7	13.0	14.9	15.2	15.9	19.5	20.3	144.4	
No. of Mines Reporting	23	42	43	34	34	35*		30	25	24	28	30	34	36	34	42	43	33*	
Production, Tons (000 omitted)	485	699	764	687	703	3,338		411	374	372	388	448	540	601	588	826	878	5,426	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal — Cost Table 73

Average costs of Southern Illinois area of Illinois subdivision (Division II), deep and stripping mines combined, by months, November 1933 through January 1935.

Mine Labor	$ .8129	$ .8315	$ .8162	$ .8317	$ .8057	$ .8191	56.66	$ .9520	$1.0061	$ .9228	$ .9777	$ .9347	$ .9298	$ .9435	$ .9590	$ .8963	$ .9028	$ .9344	56.74
Mine Supplies	.2559	.2470	.2267	.2376	.2368	.2404	16.63	.3060	.3132	.3164	.2996	.2810	.2746	.2839	.2874	.2524	.2515	.2792	16.95
Miscellaneous & Fixed Charges	.2454	.2387	.2363	.2343	.2350	.2378	16.45	.2798	.2874	.2643	.2570	.2477	.2404	.2443	.2644	.2401	.2279	.2499	15.18
Production Cost	1.3142	1.3172	1.2792	1.3036	1.2775	1.2973	89.74	1.5378	1.6067	1.5035	1.5343	1.4634	1.4448	1.4717	1.5108	1.3888	1.3822	1.4635	88.87
Selling & Administration	.1426	.1612	.1502	.1472	.1418	.1482	10.26	.2240	.2193	.2630	.2300	.1956	.1844	.1649	.1694	.1550	.1435	.1833	11.13
Total Cost	1.4568	1.4784	1.4294	1.4508	1.4193	1.4455	100.00	1.7618	1.8260	1.7665	1.7643	1.6590	1.6292	1.6366	1.6802	1.5438	1.5257	1.6468	100.00
Average No. of Days Worked	13.2	13.8	14.6	13.7	14.6	70.3		8.8	8.9	10.0	10.1	12.2	13.4	13.7	13.1	17.9	19.0	127.1	
No. of Mines Reporting	28	27	26	29	30	28*		24	24	24	24	27	30	28	30	27	29	26*	
Production, Tons (000 omitted)	1,092	1,076	1,158	1,178	1,342	5,846		563	573	633	686	905	1,088	1,085	1,062	1,456	1,567	9,618	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal. Cost Table 74. Average Costs of Division III, by months November 1933 through January 1935.

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Total Average Cost	% of Total Cost	1934 April	May	June	July	August	Sept.	October	November	December	9 Mos. Total Apr. '34 - Dec. '34 c/ Average Costs	% of Total Cost
Mine Labor	$1.1385	$1.1304	$1.1278	$1.0821	$1.1325	$1.1218	57.58	a/$1.4139	$1.3549	$1.4477	$1.4366	$1.4334	$1.4562	$1.4259	$1.4101	b/$1.3642	$1.4130	61.48
Mine Supplies	.3328	.3129	.3061	.2912	.2967	.3077	15.79	a/ .4053	.3087	.3828	.3814	.3503	.3668	.3783	.3872	b/ .3712	.3658	15.92
Miscellaneous & Fixed Charges	.3488	.3323	.3041	.3024	.3086	.3189	16.37	a/ .4194	.2820	.3169	.3295	.3150	.3175	.3015	.3116	b/ .2962	.3131	13.62
Productioo Cost	1.8201	1.7756	1.7380	1.6757	1.7378	1.7484	89.74	a/2.2386	1.9456	2.1474	2.1475	2.0987	2.1405	2.1057	2.1089	b/2.0316	2.0919	91.02
Selling & Administration	.2140	.2305	.1858	.1847	.1864	.1999	10.26	a/ .2661	.1740	.2077	.2126	.2071	.2221	.1986	.2046	b/ .2098	.2064	8.98
Total Cost	2.0341	2.0061	1.9238	1.8604	1.9242	1.9483	100.00	a/2.5047	2.1196	2.3551	2.3601	2.3058	2.3626	2.3043	2.3135	b/2.2414	2.2983	100.00
Average No. of Days Worked	12.7	13.1	15.1	15.7	15.9	72.5		9.0	19.6	15.0	13.6	15.0	14.0	15.6	14.6	16.5	131.1	
No. of Mines Reporting	50	50	45	45	46	47*		36	53	52	51	51	50	50	50	46	50*	
Production, Tons (000 omitted)	480	463	484	506	484	2,417		a/219	641	505	453	495	447	505	486	b/528	4,279	

* The number of mines as shown for this table is a simple average of the total number of mines for the several months.
a/ Southern Tennessee and Georgia did not report sufficient data to be shown for April, 1934.
b/ District 2 of Southern Tennessee and Georgia did not report for December, 1934.
c/ Data not available for January, 1935.

Bituminous Coal. Cost Table 75. Average Costs of Alabama area #1 of Division III, by months November 1933 through January 1935.

Mine Labor	1.3604	1.3393	1.3104	1.2202	1.2703	1.2933	58.09	1.7078	1.6423	1.7064	1.8142	1.7390	1.7684	1.7244	1.7571	1.6992	1.7244	63.05
Mine Supplies	.3580	.3576	.3102	.2820	.3284	.3221	14.47	.5173	.3657	.4679	.4680	.4196	.4252	.4062	.4464	.4056	.4257	15.57
Miscellaneous & Fixed Charges	.3743	.3869	.2911	.2901	.3305	.3273	14.71	.5338	.2970	.3544	.3759	.3506	.3368	.3127	.3427	.3145	.3416	12.49
Production Cost	2.0927	2.0838	1.9117	1.7923	1.9292	1.9427	87.27	2.7589	2.3050	2.5287	2.6581	2.5092	2.5304	2.4433	2.5462	2.4193	2.4917	91.11
Selling & Administration	.2940	.3235	.2719	.2698	.2732	.2835	12.73	.3262	.2137	.2516	.2333	.2301	.2478	.2281	.2513	.2631	.2433	8.89
Total Cost	2.3867	2.4073	2.1836	2.0621	2.2024	2.2262	100.00	3.0851	2.5187	2.7803	2.8914	2.7393	2.7782	2.6714	2.7975	2.6824	2.7350	100.00
Average No. of Days Worked	9.5	9.8	13.8	16.8	17.3	67.2		8.8	21.4	14.8	11.3	15.9	15.9	16.7	14.0	17.6	136.4	
No. of Mines Reporting	6	6	7	6	5	6*		4	7	7	7	7	7	7	7	7	7*	
Production, Tons (000 omitted)	48	47	71	73	57	296		29	91	68	53	74	72	79	67	80	613	

* The number of mines as shown for this table is a simple average of the total number of mines for the several months.

Bituminous Coal. Cost Table 76. Average Costs of Alabama area #2 of Division III, by months November 1933 through January 1935.

Mine Labor	1.0355	1.0171	1.0140	.9592	.9994	1.0049	56.70	1.2588	1.1797	1.2784	1.2568	1.2629	1.2767	1.2633	1.2456	1.2075	1.2431	59.99
Mine Supplies	.3059	.3032	.3051	.2876	.3047	.3012	17.00	.3845	.2898	.3464	.3445	.3399	.3484	.3473	.3656	.3464	.3410	16.46
Miscellaneous & Fixed Charges	.3236	.3021	.2939	.2834	.3031	.3012	16.99	.4014	.2736	.3080	.3314	.3213	.3306	.3111	.3227	.2828	.3128	15.09
Production Cost	1.6650	1.6224	1.6130	1.5302	1.6072	1.6073	90.69	2.0447	1.7431	1.9328	1.9327	1.9241	1.9557	1.9217	1.9339	1.8369	1.8967	91.54
Selling & Administration	.1831	.1813	.1566	.1440	.1611	.1650	9.31	.2543	.1436	.1700	.1884	.1792	.1860	.1644	.1674	.1784	.1752	8.46
Total Cost	1.8481	1.8037	1.7696	1.6742	1.7683	1.7723	100.00	2.2990	1.8867	2.1028	2.1211	2.1033	2.1417	2.0861	2.1013	2.0151	2.0721	100.00
Average No. of Days Worked	12.7	12.9	14.3	14.5	14.3	68.7		7.7	19.1	14.2	12.6	13.5	12.3	14.1	13.5	15.3	122.3	
No. of Mines Reporting	22	19	19	18	18	19*		18	21	21	20	19	19	20	20	20	20*	
Production, Tons (000 omitted)	259	237	259	260	227	1,242		118	326	252	215	221	195	228	224	257	2,036	

* The number of mines as shown for this table is a simple average of the total number of mines for the several months.

Bituminous Coal. Cost Table 77. Average Costs of Alabama area #3 of Division III, by months November 1933 through January 1935.

	(Average Costs per Ton) 1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Total Average Cost	% of Total Cost	1934 April	May	June	July	August	Sept.	October	November	December	9 Mos. Total Apr. '34 - Dec. '34 Average Costs	% of Total Cost
Mine Labor	$1.1111	$1.1216	$1.1352	$1.1630	$1.1939	$1.1466	54.89	$1.4758	$1.4450	$1.5421	$1.4145	$1.3979	$1.4134	$1.3650	$1.3427	$1.3565	$1.4117	59.11
Mine Supplies	.3939	.3207	.3067	.3269	.3239	.3323	15.91	.3581	.3482	.4000	.4016	.3405	.3685	.4091	.4074	.4166	.3843	16.09
Miscellaneous & Fixed Charges	.4217	.3707	.3748	.3829	.3299	.3738	17.89	.3957	.3370	.4000	.3544	.3409	.3207	.3137	.2910	.3077	.3366	14.09
Production Cost	1.9267	1.8130	1.8167	1.8728	1.8477	1.8527	88.69	2.2296	2.1302	2.3421	2.1705	2.0793	2.1026	2.0878	2.0411	2.0808	2.1326	89.29
Selling & Administration	.2700	.2615	.2285	.2270	.2012	.2363	11.31	.2451	.2248	.2999	.2525	.2662	.2855	.2468	.2518	.2426	.2559	10.71
Total Cost	2.1967	2.0745	2.0452	2.0998	2.0489	2.0890	100.00	2.4747	2.3550	2.6420	2.4230	2.3455	2.3881	2.3346	2.2929	2.3234	2.3885	100.00
Average No. of Days Worked	12.7	14.6	17.3	17.0	17.5	79.1		13.5	18.8	14.7	15.2	16.0	16.0	19.0	18.6	19.2	151.0	
No. of Mines Reporting	10	13	11	11	11	11*		11	12	12	11	12	11	11	11	11	11*	
Production, Tons (000 omitted)	69	84	82	81	68	404		67	100	77	84	91	80	94	98	102	793	

* The number of mines as shown for this table is a simple average of the total number of mines for the several months.

Bituminnus Coal. Cost Table 78. Average Costs of Alabama area #4 of Division III, by months November 1933 through January 1935.

Mine Labor	1.5614	1.5504	1.5056	1.5414	1.8589	1.5856	57.33	2.4216	1.7917	1.8504	1.8954	2.0566	1.9710	1.9786	2.0739	1.9847	1.9540	64.37
Mine Supplies	.5939	.5979	.5288	.5679	.5614	.5719	20.68	.8252	.5023	.5319	.5438	.6246	.6260	.6395	.6576	.5063	.5808	19.13
Miscellaneous & Fixed Charges	.4378	.3663	.1698	.3027	.4719	.3484	12.60	.4983	.2329	.2697	.2678	.2754	.2740	.2639	.3152	.3638	.2859	9.42
Production Cost	2.5931	2.5146	2.2042	2.4120	2.8922	2.5059	90.61	3.7451	2.5269	2.6520	2.7070	2.9566	2.8710	2.8820	3.0467	2.8546	2.8207	92.92
Selling & Administration	.2235	.2495	.1527	.3289	.4106	.2598	9.39	.4522	.1929	.1801	.1826	.2249	.2721	.2060	.2302	.2040	.2150	7.08
Total Cost	2.8166	2.7641	2.3569	2.7409	3.3028	2.7657	100.00	4.1973	2.7198	2.8321	2.8896	3.1815	3.1431	3.0880	3.2769	3.0586	3.0357	100.00
Average No. of Days Worked	17.1	15.0	17.6	15.1	10.0	74.8		7.0	21.6	20.9	19.8	18.2	16.7	17.5	15.8	17.7	155.2	
No. of Mines Reporting	5	4	4	4	5	5*		3	5	5	5	5	5	5	5	4	4*	
Production, Tons (000 omitted)	34	25	25	23	17	124		6	37	37	35	32	31	34	30	33	275	

* The number of mines as shown for this table is a simple average of the total number of mines for the several months.

Bituminous Coal. Cost Table 79. Average Costs of Alabama areas of Division III, by months November 1933 through January 1935.

Mine Labor	1.1295	1.1116	1.1133	1.0712	1.1212	1.1088	56.60	1.4139	1.3445	1.4407	1.4259	1.4370	1.4560	1.4255	1.4093	1.3775	1.4110	60.82
Mine Supplies	.3504	.3320	.3193	.3087	.3239	.3265	16.67	.4053	.3270	.3906	.3920	.3759	.3900	.3943	.4090	.3828	.3819	16.46
Miscellaneous & Fixed Charges	.3554	.3309	.3014	.3040	.3207	.3219	16.44	.4194	.2861	.3284	.3366	.3272	.3251	.3083	.3180	.2992	.3206	13.81
Production Cost	1.8353	1.7745	1.7340	1.6839	1.7658	1.7572	89.71	2.2386	1.9576	2.1597	2.1545	2.1401	2.1711	2.1281	2.1363	2.0595	2.1135	91.09
Selling & Administration	.2141	.2199	.1886	.1901	.1976	.2017	10.29	.2661	.1730	.2068	.2080	.2105	.2259	.1970	.2051	.2085	.2067	8.91
Total Cost	2.0494	1.9944	1.9226	1.8740	1.9634	1.9589	100.00	2.5047	2.1306	2.3665	2.3625	2.3506	2.3970	2.3251	2.3414	2.2680	2.3202	100.00
Average No. of Days Worked	12.5	12.9	14.9	15.3	15.0	70.6		9.0	19.5	14.7	13.4	14.6	13.9	15.6	14.7	16.5	132.0	
No. of Mines Reporting	43	42	41	39	39	41*		36	45	45	43	43	42	43	43	42	42*	
Production, Tons (000 omitted)	410	393	437	437	389	2,066		219	554	434	388	418	377	435	418	473	3,716	

* The number of mines as shown for this table is a simple average of the total number of mines for the several months.

Bituminous Coal. Cost Table 80.

Average Costs of Southern Tennessee and Georgia area of Division III, by months November 1933 through January 1935.

	Average Costs per Ton) 1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Total Average Cost	5 Mos. Total % of Total Cost	1934 April	May	June	July	August	Sept.	October	November	December	9 Mos. Total Apr. '34 - Dec. '34 Average Costs	% of Total Cost
Mine Labor	$1.1921	$1.2349	$1.2612	$1.1508	$1.1792	$1.1984	63.54		$1.4218	$1.4913	$1.5006	$1.4142	$1.4571	$1.4284	$1.4153	$1.2511 a/	$1.4261	66.19
Mine Supplies	.2286	.2069	.1845	.1809	.1847	.1970	10.45		.1915	.3344	.3178	.2116	.2415	.2798	.2527	.2732 a/	.2594	12.04
Miscellaneous & Fixed Charges	.3091	.3400	.3290	.2928	.2589	.3013	15.97		.2554	.2464	.2869	.2490	.2770	.2597	.2728	.2714 a/	.2640	12.26
Production Cost	1.7298	1.7818	1.7747	1.6245	1.6228	1.6967	89.96		1.8687	2.0721	2.1053	1.8748	1.9756	1.9679	1.9408	1.7957 a/	1.9495	90.49
Selling & Administration	.2135	.2897	.1610	.1505	.1397	.1894	10.04		.1798	.2134	.2406	.1881	.2011	.2078	.2017	.2207 a/	.2050	9.51
Total Cost	1.9433	2.0715	1.9357	1.7750	1.7625	1.8861	100.00	No Data	2.0485	2.2855	2.3459	2.0629	2.1767	2.1757	2.1425	2.0164 a/	2.1545	100.00
Average No. of Days Worked	14.6	14.9	17.2	18.7	20.8	86.2			19.9	17.2	15.0	17.3	14.9	15.5	14.2	16.0	125.5	
No. of Mines Reporting	7	8	4	6	7	6a			8	7	8	8	8	7	7	4	8a	
Production, Tons (000 omitted)	69	71	47	69	95	351			86	71	65	77	70	70	68	56 a/	563	

a The number of mines as shown for this table is a simple average of the total number of mines for the several months.
a/ District 2 of the Tennessee - Georgia area not available for December - Data shown is for District 1 only in this month.

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Bituminous Coal. Cost Table 81. Average Costs of Division IV[1/] deep and strip mines combined, by months. November 1933 through March 1934.

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Total Average Cost	5 Mos. Total % of Total Cost
Mine Labor	$ .8079	$ .8417	$ .8047	$ .8370	$ .6726a/	$ .8011	45.23
Mine Supplies	.3700	.3469	.2948	.3243	.3117a/	.3297	18.62
Miscellaneous & Fixed Charges	.4268	.4308	.3850	.4100	.4014a/	.4106	23.19
Production Cost	1.6047	1.6194	1.4845	1.5713	1.3857a/	1.5414	87.04
Selling & Administration	.2158	.2511	.2276	.2434	.2018a/	.2296	12.96
Total Cost	1.8205	1.8705	1.7121	1.8147	1.5875a/	1.7710	100.00
Average No. of Days Worked	13.5	14.0	14.4	12.3	13.1		67.3
No. of Mines Reporting	60	65	69	58	34		58*
Production, Tons (000 omitted)	458	488	556	371	298a/		2,171

* The number of mines as shown for this table is a simple average of the total number of mines for the several months.

1/ Division IV includes Southwestern, deep and strip and Arkansas and Eastern Oklahoma. Data after February 1934 were not available for the latter subdivision. Southwestern Subdivision reported for March 1934 but reported only a small sample for April 1934, therefore it is not shown.

a/ Southwestern Subdivision, deep and strip only; Arkansas and Eastern Oklahoma not available for March, 1934.

Bituminous Coal. Cost Table 82. Average Costs of Southwestern Subdivision of Division IV, deep and stripping mines combined, by months, November 1933 through March 1934.

Mine Labor	.6816	.7403	.7163	.7531	.6726a/	.7141	43.38
Mine Supplies	.3355	.3364	.2854	.3125	.3117a/	.3154	19.16
Miscellaneous & Fixed Charges	.4043	.4115	.3740	.4036	.4014a/	.3976	24.15
Production Cost	1.4214	1.4882	1.3757	1.4692	1.3857a/	1.4271	86.69
Selling & Administration	.2121	.2380	.2129	.2281	.2018a/	.2192	13.31
Total Cost	1.6335	1.7262	1.5886	1.6973	1.5875a/	1.6463	100.00
Average No. of Days Worked	15.0	14.7	14.9	12.8	13.1		69.5
No. of Mines Reporting	39	49	53	46	34		44*
Production, Tons (000 omitted)	396	432	499	331	298a/		1,956

* The number of mines as shown for this table is a simple average of the total number of mines for the several months.

a/ Excluding McAlester, Oklahoma.

Bituminous Coal. Cost Table 83. Average Costs of Missouri Block area of Southwestern Subdivision (Division IV), deep mines, by months, November 1933 through March 1934.

Mine Labor	1.5170	1.5144	1.4709	1.5147	1.5021	1.5015	70.31
Mine Supplies	.1939	.2559	.1732	.1779	.2191	.2013	9.43
Miscellaneous & Fixed Charges	.2496	.2423	.2411	.2408	.2518	.2447	11.46
Production Cost	1.9605	2.0126	1.8852	1.9334	1.9730	1.9475	91.20
Selling & Administration	.1224	.2040	.1846	.2288	.1827	.1879	8.80
Total Cost	2.0829	2.2166	2.0698	2.1622	2.1557	2.1354	100.00
Average No. of Days Worked	12.1	11.8	15.2	13.6	12.2		64.9
No. of Mines Reporting	4	5	6	6	5		5*
Production, Tons (000 omitted)	21	26	35	31	26		139

* The number of mines as shown for this table is a simple average of the total number of mines for the several months.

Bituminous Coal. Cost Table 84. Average Costs of Northern Missouri area of Southwestern subdivision (Division IV) deep mines, by months, November 1933 through March 1934.

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Total Average Cost	5 Mos. Total % of Total Cost
Mine Labor	$1.4941	$1.5071	$1.3651	$1.4460	$1.4683	$1.4454	67.43
Mine Supplies	.2923	.3248	.2592	.3196	.2927	.2947	13.75
Miscellaneous & Fixed Charges	.1611	.2115	.1920	.2063	.2393	.2020	9.43
Production Cost	1.9475	2.0434	1.8163	1.9719	2.0003	1.9421	90.61
Selling & Administration	.1663	.2027	.1791	.2317	.2335	.2013	9.39
Total Cost	$2.1138	2.2461	1.9954	2.2036	2.2338	2.1434	100.00
Average No. of Days Worked	14.6	15.9	18.9	13.9	16.9		80.2
No. of Mines Reporting	5	6	7	6	4		6*
Production, Tons (000 omitted)	17	24	35	23	19		118

* The number of mines as shown for this table is a simple average of the total number of mines for the several months.

Bituminous Coal. Cost Table 85. Average Costs of Henrysetta Oklahoma area of Southwestern Subdivision (Division IV) deep mines, by months, November 1933 through March 1934.

Mine Labor	1.2467	1.2573	1.2388	1.1752	1.3592	1.2419	54.62
Mine Supplies	.2136	.2629	.2305	.3158	.2832	.2524	11.10
Miscellaneous & Fixed Charges	.3986	.3609	.3600	.5140	.6232	.4056	17.83
Production Cost	1.8589	1.8811	1.8293	2.0050	2.2656	1.8999	83.55
Selling & Administration	.3485	.3638	.3657	.3924	.5357	.3740	16.45
Total Cost	2.2074	2.2449	2.1950	2.3974	2.8013	2.2739	100.00
Average No. of Days Worked	10.6	12.2	11.1	9.4	4.0		47.3
No. of Mines Reporting	7	9	9	6	5		7*
Production, Tons (000 omitted)	21	30	28	16	5		100

* The number of mines as shown for this table is a simple average of the total number of mines for the several months.

Bituminous Coal. Cost Table 86. Average Costs of McAlester Oklahoma area of Southwestern Subdivision (Division IV) deep mines, by months, November 1933 through March 1934.

Mine Labor	1.6677	1.7024	1.6393	2.0538		1.7087	56.30
Mine Supplies	.4621	.4110	.3601	.6826		.4409	14.53
Miscellaneous & Fixed Charges	.5664	.3005	.4425	.6180		.4618	15.22
Production Cost	2.6962	2.4139	2.4419	3.3544		2.6114	86.05
Selling & Administration	.4528	.3649	.3734	.6294		.4234	13.95
Total Cost	3.1490	2.7788	2.8153	3.9838		3.0348	100.00
Average No. of Days Worked	23.8	18.5	19.1	8.0		69.4	
No. of Mines Reporting	3	3	3	3		3*	
Production, Tons (000 omitted)	16	14	14	5		49	

* The number of mines as shown for this table is a simple average of the total number of mines for the several months.

Bituminous Coal. Cost Table 87. Average Costs of Southern Missouri area of Southwestern Subdivision (Division IV) stripping mines, by months, November 1933 through March 1934.

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Total Average Cost	5 Mos. Total % of Total Cost
Mine Labor	$ .4576	$.4337	$.4326	$.5160	$ .5191	$ .4532	31.43
Mine Supplies	.3681	.3288	.3312	.3634	.4202	.3493	24.22
Miscellaneous & Fixed Charges	.4277	.4482	.4185	.5221	.5935	.4519	31.33
Production Cost	1.2534	1.2107	1.1823	1.4015	1.5328	1.2544	86.98
Selling & Administration	.1936	.2111	.1990	.1423	.0929	.1877	13.02
Total Cost	1.4470	1.4218	1.3813	1.5438	1.6257	1.4421	100.00
Average No. of Days Worked	17.3	18.8	19.4	13.6	13.0	82.1	
No. of Mines Reporting	5	5	6	4	3	4*	
Production, Tons (000 omitted)	110	126	142	42	35	445	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal. Cost Table 88. Average Costs of Southeastern Kansas area of Southwestern Subdivision (Division IV), deep and stripping mines combined, by months, November 1933 through March 1934.

Mine Labor	.5144	.6055	.5653	.5546	.5071	.5498	36.78
Mine Supplies	.3389	.3575	.2806	.3120	.3078	.3182	21.28
Miscellaneous & Fixed Charges	.4156	.4475	.3907	.4116	.3982	.4121	27.57
Production Cost	1.2689	1.4105	1.2366	1.2782	1.2131	1.2801	85.63
Selling & Administration	.2022	.2362	.2027	.2229	.2114	.2148	14.37
Total Cost	1.4711	1.6467	1.4393	1.5011	1.4245	1.4949	100.00
Average No. of Days Worked	14.6	13.5	13.1	12.9	13.7	67.8	
No. of Mines Reporting	15	21	22	21	17	19 *	
Production, Tons (000 omitted)	210	212	244	214	213	1,093	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal. Cost Table 89. Average Costs of Southeastern Kansas area of Southwestern Subdivision (Division IV), deep mines only, by months, November 1933 through March 1934.

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Total Average Cost	5 Mos. Total % of Total Cost
Mine Labor	$ 1.2086	$1.3251	$1.2451	$1.2449	$1.2679	$1.2589	67.37
Mine Supplies	.1616	.2220	.1691	.1485	.1637	.1732	9.27
Miscellaneous & Fixed Charges	.3228	.3114	.3405	.3457	.3731	.3384	18.11
Production Cost	1.6930	1.8585	1.7547	1.7391	1.8047	1.7705	94.75
Selling & Administration	.1090	.1147	.0840	.0900	.0966	.0980	5.25
Total Cost	1.8020	1.9732	1.8387	1.8291	1.9013	1.8685	100.00
Average No. of Days Worked	8.9	9.3	10.9	9.4	9.5	48.0	
No. of Mines Reporting	4	5	5	5	3	4*	
Production, Tons (000 omitted)	31	36	42	37	31	177	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal. Cost Table 90. Average Costs of Southeastern Kansas area of Southwestern Subdivision (Division IV), stripping mines only, by months, November 1933 through March 1934.

Mine Labor	.3932	.4592	.4231	.4120	.3748	.4125	29.00
Mine Supplies	.3699	.3850	.3039	.3457	.3328	.3463	24.34
Miscellaneous & Fixed Charges	.4318	.4752	.4012	.4253	.4026	.4263	29.97
Production Cost	1.1949	1.3194	1.1282	1.1830	1.1102	1.1851	83.31
Selling & Administration	.2185	.2609	.2275	.2503	.2314	.2374	16.69
Total Cost	1.4134	1.5803	1.3557	1.4333	1.3416	1.4225	100.00
Average No. of Days Worked	16.4	14.8	13.6	14.0	14.8	73.6	
No. of Mines Reporting	11	16	17	16	14	15*	
Production, Tons (000 omitted)	179	176	201	178	182	916	

* A simple average of the total number of mines reported for the several months.

Bituminous Coal. Cost Table 91. Average Costs of Arkansas and Eastern Oklahoma Subdivision of Division IV 1/, by months, November 1933 through February 1934.

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	4 Mos. Total Average Cost	% of Total Cost
Mine Labor	$1.6276	$1.6187	$1.5715	$1.5326	$1.5926	54.80
Mine Supplies	.5940	.4274	.3768	.4227	.4604	15.84
Miscellaneous & Fixed Charges	.5723	.5782	.4807	.4622	.5288	18.20
Production Cost	2.7939	2.6243	2.4290	2.4175	2.5818	88.84
Selling & Administration	.2399	.3522	.3548	.3710	.3245	11.16
Total Cost	3.0338	2.9765	2.7838	2.7885	2.9063	100.00
Average No. of Days Worked	8.3	10.1	11.4	9.4	33.9	
No. of Mines Reporting	21	19	16	12	18*	
Production, Tons (000 omitted)	61	56	58	40	215	

* A simple average of the total number of mines reporting for the several months.
1/ Arkansas and Eastern Oklahoma data were not available after February, 1934.

Bituminous Coal. Cost Table 92. Average Costs of Arkansas Smokeless High Coal area of Arkansas and Eastern Oklahoma Subdivision (Division IV) 1/, by months, November 1933 through February 1934.

Mine Labor	1.4782	1.5541	1.6037	1.5058	1.5128	60.45
Mine Supplies	.4672	.3918	.3775	.2540	.4063	16.23
Miscellaneous & Fixed Charges	.3076	.4206	.4275	.3400	.3495	13.97
Production Cost	2.2530	2.3665	2.4087	2.0998	2.2686	90.65
Selling & Administration	.1459	.3324	.3079	.3398	.2340	9.35
Total Cost	2.3989	2.6989	2.7166	2.4396	2.5026	100.00
Average No. of Days Worked	8.3	5.8	5.3	6.3	25.7	
No. of Mines Reporting	5	5	3	4	4*	
Production, Tons (000 omitted)	26	10	6	9	51	

* A simple average of the total number of mines reporting for the several months.
1/ Arkansas and Eastern Oklahoma data were not available after February, 1934.

Bituminous Coal. Cost Table 93. Average Costs of Arkansas Smokeless Low Coal area of Arkansas and Eastern Oklahoma Subdivision (Division IV), by months, December 1933 and January 1934. 1/

Mine Labor	Not Available	1.7022	1.7482	Not Available	1.7312 2/ 66.04
Mine Supplies		.2529	.2839		.2724 2/ 10.39
Miscellaneous & Fixed Charges		.2610	.3442		.3135 2/ 11.96
Production Cost		2.2161	2.3763		2.3171 2/ 88.39
Selling & Administration		.3086	.3020		.3044 2/ 11.61
Total Cost		2.5247	2.6783		2.6215 2/ 100.00
Average No. of Days Worked		14.7	12.6		27.3 2/
No. of Mines Reporting		3	4		2/4*
Production, Tons (000 omitted)		6	9		15 2/

* A simple average of the total number of mines reporting for the several months.
1/ Other months not available.
2/ Two months' average.

Bituminous Coal. Cost Table 94. Average Costs of Paris area of Arkansas and Eastern Oklahoma Subdivision (Division IV) 1/, by months, November 1933 through February 1934.

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	4 Mos. Total Average Cost	% of Total Cost
Mine Labor	$2.2335	$1.7801	$1.6794	$1.6593	$1.7989	51.15
Mine Supplies	1.1723	.5696	.4598	.7043	.6640	18.88
Miscellaneous & Fixed Charges	.8985	.6723	.5883	.4238	.6312	17.95
Production Cost	4.3043	3.0220	2.7275	2.7874	3.0941	87.98
Selling & Administration	.4165	.4188	.4245	.4303	.4227	12.02
Total Cost	4.7208	3.4408	3.1520	3.2177	3.5168	100.00
Average No. of Days Worked	6.7	12.8	17.9	14.3	51.7	
No. of Mines Reporting	5	5	4	3	4*	
Production, Tons (000 omitted)	8	13	16	9	46	

* A simple average of the total number of mines reporting for the several months.
1/ Arkansas and Eastern Oklahoma data were not available after February, 1934.

Bituminous Coal. Cost Table 95. Average Costs of Eastern Oklahoma High Coal area of Arkansas and Eastern Oklahoma Subdivision (Division IV) 1/, by months, November 1933 through February 1934.

Mine Labor	1.7765	1.5518	1.4365	1.4873	1.5445	53.07
Mine Supplies	.5844	.4081	.3588	.3643	.4156	14.28
Miscellaneous & Fixed Charges	.8852	.6505	.4758	.5262	.6143	21.10
Production Cost	3.2461	2.6104	2.2711	2.3778	2.5744	88.45
Selling & Administration	.2978	.3370	.3420	.3570	.3360	11.55
Total Cost	3.5439	2.9474	2.6131	2.7348	2.9104	100.00
Average No. of Days Worked	6.9	11.1	11.5	9.9	39.4	
No. of Mines Reporting	6	6	5	5	6*	
Production, Tons (000 omitted)	17	28	26	22	93	

* A simple average of the total number of mines reporting for the several months.
1/ Arkansas and Eastern Oklahoma data were not available after February, 1934.

Bituminous Coal
Cost Table 96

Average costs of Division V[1] by months
November 1933 through March 1934

(Average Costs per Ton)	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Average Cost	Total % of Total Cost
Mine Labor	$1.0894	$1.0397	$1.0522	$1.0784	$1.1828a/	$1.0758	52.70
Mine Supplies	.3179	.3116	.3068	.3150	.2962a/	.3111	15.24
Miscellaneous & Fixed Charges	.3884	.4065	.3973	.4448	.4689a/	.4122	20.19
Production Cost	1.7957	1.7578	1.7559	1.8382	1.9479a/	1.7991	88.13
Selling & Administration	.2245	.2404	.2389	.2644	.2632a/	.2423	11.87
Total Cost	2.0202	1.9982	1.9948	2.1026	2.2111a/	2.0414	100.00
Average No. of Days Worked	15.6	15.3	14.3	11.5	12.4a/	63.7	
No. of Mines Reporting	120	108	111	97	52 a/	109*	
Production, Tons (000 omitted)	1,318	1,258	1,194	864	500a/	5,134	

* A simple average of the total number of mines reporting for the several months
1/ Division V includes the following districts: Northern Wyoming, Southern Wyoming, Montana, Central New Mexico, Utah, Washington, North Dakota - Strip Mines, Northern Colorado, Southern Colorado. Complete data not available after March, 1934.
a/ Includes North Wyoming, Montana, Central New Mexico, Utah, Washington, Northern Colorado.

Bituminous Coal
Cost Table 97

Average costs of Northern Wyoming[1] (Division V)
by months November 1933 through March 1934

(Average Costs per Ton)	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Average Cost	Total % of Total Cost
Mine Labor	$ .7079	$ .7982	$ .7685	$ .5569	$ .7934	$ .7373	47.90
Mine Supplies	.2826	.3198	.3211	.3139	.3217	.3091	20.08
Miscellaneous & Fixed Charges	.2859	.3460	.3264	.4096	.3921	.3398	22.08
Production Cost	1.2764	1.4640	1.4160	1.2804	1.5072	1.3862	90.06
Selling & Administration	.1270	.1631	.1520	.1499	.1875	.1530	9.94
Total Cost	1.4034	1.6271	1.5680	1.4303	1.6947	1.5392	100.00
Average No. of Days Worked	16.8	13.9	12.2	8.3	9.8	61.0	
No. of Mines Reporting	5	4	5	4	5	5*	
Production, Tons (000 omitted)	86	65	66	35	51	303	

* A simple average of the total numbers of mines reporting for the several months.
1/ Not available after March, 1934.

Bituminous Coal
Cost Table 98

Average costs of Southern Wyoming (Division V), by months
November 1933 through February 1934

(Average Costs per Ton)	1933 Nov.	Dec.	1934 Jan.	Feb.	March	4 Mos. Average Cost	Total % of Total Cost
Mine Labor	$1.0515	$1.0105	$1.0140	$1.0703	$	$1.0335a/	50.36
Mine Supplies	.4682	.3940	.3734	.4137		.4031a/	19.64
Miscellaneous & Fixed Charges	.3843	.3809	.3498	.3867		.3747a/	18.25
Production Cost	1.9040	1.7554	1.7372	1.8707		1.8113a/	88.25
Selling & Administration	.2382	.2440	.2228	.2667		.2412a/	11.75
Total Cost	2.1422	1.9994	1.9600	2.1374		2.0525a/	100.00
Average No. of Days Worked	15.6	16.7	14.6	10.7		57.6	
No. of Mines Reporting	10	10	10	9		10*	
Production, Tons (000 omitted)	105	115	107	77		404a/	

* A simple average of the total number of mines reporting for the several months.
a/ Total 4 months only. Not available after February 1934

Bituminous Coal
Cost Table 99

Average costs of Montana[1] Division V[1], by months
November 1933 through April 1934

(Average Costs per Ton)	1933 Nov.	Dec.	1934 Jan	Feb.	March	5 Mos. Average Cost	Total % of Total Cost	1934 April
Mine Labor	$ .5727	$ .5344	$ .5891	$ .5752	$ .5988	$ .5777	45.93	$ .5268
Mine Supplies	.3413	.3468	.3440	.3803	.3952	.3570	18.69	.3800
Miscellaneous & Fixed Charges	.3626	.3759	.4357	.4685	.5066	.4173	21.84	.4791
Production Cost	1.5766	1.5571	1.6688	1.7240	1.8506	1.6520	86.46	1.6859
Selling & Administration	.2094	.2352	.2768	.2829	.3385	.2589	13.54	.3266
Total Cost	1.7860	1.7923	1.9456	2.0069	2.1891	1.9109	100.00	2.0125
Average No. of Days Worked	13.9	12.6	10.8	9.0	7.9	54.2		8.1
No. of Mines Reporting	6	6	5	5	6	6*		4
Production, Tons (000 omitted)	67	63	50	40	37	257		26

* A simple average of the total number of mines reporting for the several months.
1/ Not available after April 1934.

Bituminous Coal
Cost Table 100

Average costs of Central New Mexico[1] (Division V), by months
November 1933 through April 1934

(Average Costs per Ton)	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Average Cost	Total % of Total Cost	1934 April
Mine Labor	$1.5885	$1.5823	$1.5447	$1.7109	$1.8509	$1.6435	50.93	$1.8536
Mine Supplies	.3945	.5455	.3830	.4684	.4627	.4475	13.86	.4267
Miscellaneous & Fixed Charges	.8839	.8967	.7497	.9842	.9191	.8761	27.15	.9663
Production Cost	2.8669	3.0245	2.6774	3.1635	3.2327	2.9671	91.94	3.2466
Selling & Administration	.2489	.2853	.2095	.2943	.3274	.2600	8.06	.3675
Total Cost	3.1158	3.2698	2.8869	3.4578	3.5601	3.2271	100.00	3.6141
Average No. of Days Worked	21.0	17.9	17.3	11.4	10.5	78.1		10.3
No. of Mines Reporting	4	4	4	5	5	5*		5
Production, Tons (000 omitted)	39	41	50	33	36	199		34

* A simple average of the total number of mines reporting for the several months.
1/ Not available after April, 1934.

Bituminous Coal
Cost Table 101

Average costs of Utah[1] (Division V), by months
November 1933 through April 1934

(Average Costs per Ton)	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Average Cost	Total % of Total Cost	1934 April
Mine Labor	$1.0339	$1.0224	$1.0592	$1.1211	$1.0488	$1.0485	48.30	$1.0984
Mine Supplies	.3192	.3094	.3266	.3830	.3255	.3265	15.04	.3239
Miscellaneous & Fixed Charges	.3910	.4025	.4254	.6139	.6004	.4509	20.78	.5570
Production Cost	1.7441	1.7343	1.8112	2.1180	1.9747	1.8259	84.12	2.0793
Selling & Administration	.2739	.3031	.3292	.5155	.4834	.3447	15.88	.4855
Total Cost	2.0180	2.0374	2.1364	2.6335	2.4581	2.1706	100.00	2.5648
Average No. of Days Worked	13.4	13.8	11.8	7.7	8.9	55.6	8.4	
No. of Mines Reporting	18	18	17	15	11	16*	9	
Production, Tons (000 omitted)	268	274	229	118	106	995	67	

* A simple average of the total number of mines reporting for the several months.
1/ Not available after April, 1934.

Bituminous Coal
Cost Table 102

Average costs of Washington[1] (Division V), by months
November 1933 through April 1934

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Total Average Cost	5 Mos. Total % of Total Cost	1934 April
Mine Labor	$1.5217	$1.4742	$1.4453	$1.5176	$1.4957	$1.4965	63.76	$ 2.0728
Mine Supplies	.2992	.2758	.2730	.3157	.2544	.2862	12.20	.4856
Miscellaneous & Fixed Charges	.3719	.4559	.3746	.4761	.4485	.4153	17.69	.4773
Production Cost	$.1984	$.2059	$.0959	$.3094	$.1986	$.1980	93.65	3.0357
Selling & Administration	.1187	.2145	.1680	.1558	.1269	.1490	6.35	.4051
Total Cost	$.3111	$.4204	$.2639	$.4652	$.3255	$.3470	100.00	3.4408
Average No. of Days Worked	21.1	19.8	19.3	12.7	14.2	87.1		10.7
No. of Mines Reporting	16	5	7	8	6	8*		4
Production, Tons (000 omitted)	145	61	80	75	75	436		26

* A simple average of the total number of mines reporting for the several months.
1/ Not available after April, 1934

Bituminous Coal
Cost Table 103

Average costs of North Dakota stripping mines, (Division V)
by months, November 1933 through February 1934

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	4 Mos. Average Cost	Total % of Total Cost
Mine Labor	$ .4080	$ .3468	$ .3309	$ .3269		$ .3519a/	35.45
Mine Supplies	.1951	.1732	.1727	.2026		.1841a/	18.54
Miscellaneous & Fixed Charges	.3086	.2998	.2754	.3178		.2984a/	30.05
Production Cost	.9117	.8194	.7790	.8473		.8344a/	84.04
Selling & Administration	.1781	.1544	.1414	.1660		.1584a/	15.96
Total Cost	1.0898	.9738	.9204	1.0133		.9928a/	100.00
Average No. of Days Worked	16.4	22.4	23.3	16.3		78.4	
No. of Mines Reporting	6	6	6	6		6*	
Production, Tons (000 omitted)	112	137	143	100		492a/	

* A simple average of the total number of mines reporting for the several months.
a/ Total for 4 months only. Not available after February 1934.

Bituminous Coal
Cost Table 104

Average costs of Northern Colorado[1/] (Division V), by months
November 1933 through June 1934

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	5 Mos. Average Cost	Total % of Total Cost	1934 April	May	June
Mine Labor	$1.1256	$1.1187	$1.1273	$1.1025	$1.1583	$1.1254	59.68	$1.3235	$1.3735	$1.4349
Mine Supplies	.2730	.2762	.2761	.2225	.2404	.2591	13.74	.2492	.3162	.3113
Miscellaneous & Fixed Charges	.3209	.3334	.3329	.3366	.3355	.3318	17.60	.3702	.4029	.4241
Production Cost	1.7195	1.7283	1.7363	1.6616	1.7342	1.7163	91.02	1.9429	2.0926	2.1703
Selling & Administration	.1787	.1554	.1586	.1698	.1902	.1693	8.98	.2502	.3660	.3337
Total Cost	1.8982	1.8837	1.8949	1.8312	1.9244	1.8856	100.00	2.1931	2.4586	2.5040
Average No. of Days Worked	21.1	21.5	20.5	20.7	20.4	104.1		16.0	14.3	13.1
No. of Mines Reporting	20	21	20	19	19	20[a]		14	8	8
Production, Tons (000 omitted)	229	271	231	221	195	1,147		100	55	47

[a] A simple average of the total number of mines reporting for the several months.
1/ Northern Colorado received through September, 1934. Due to the fact that it was the only subdivision of Division V that reported after May, the schedules were not tabulated after June.

Bituminous Coal
Cost Table 105

Average costs of Southern Colorado[1/] (Division V), by months
November 1933 through February 1934

(Average Costs per Ton)

	1933 Nov.	Dec.	1934 Jan.	Feb.	March	4 Mos. Average Cost	Total % of Total Cost
Mine Labor	$1.2871	$1.3039	$1.2958	$1.3111		$1.2961	52.77
Mine Supplies	.3519	.3672	.3490	.3657		.3575	14.54
Miscellaneous & Fixed Charges	.4551	.4975	.4718	.4518		.4699	19.10
Production Cost	2.0941	2.1686	2.1166	2.1286		2.1255	86.41
Selling & Administration	.3170	.3438	.3440	.3342		.3342	13.59
Total Cost	2.4111	2.5124	2.4606	2.4628		2.4597	100.00
Average No. of Days Worked	12.5	10.4	10.7	9.0		42.6	
No. of Mines Reporting	35	34	36	26		33[a]	
Production, Tons (000 omitted)	266	231	241	163		901	

[a] A simple average of the total number of mines reporting for the several months.
1/ Not available after February, 1934.

Labor Cost Per Ton May 1933, compared with Labor Cost Per Ton 10 Months April 1934 through January 1935. Realization Per Ton January through September 1933 compared with Realization Per Ton - April 1934 through January 1935.

DIVISION AND SUB-DIVISION	LABOR COST		REALIZATION		INCREASE DUE TO CODE				LABOR COST		REALIZATION		INCREASE DUE TO AMENDMENT NO. 1				AVERAGE INCREASE UNDER CODE			
	May 1933	Dec 1933	Jan-Sept '33	Oct-Dec '33	Labor Costs		Realization		Nov 1933 through Mar 1934	10 Months Apr '34 thru Jan 1935	Nov 1933 through Mar. 1934	10 Months Apr '34 thru Jan 1935	Labor Costs		Realization		Labor Cost		Realization	
	Pre-Code		Pre-Code		Dec over May 1933		Oct Dec over Jan-Sept '33						10 Months - Apr '34 - Jan '35 over 5 Months Nov 33 - Mar '34		10 Months Apr '34 - Jan '35 over 5 Months Nov '33 - Mar '34		10 Months Apr '34 - Jan '35 over May '33		10 Months Apr '34 - Jan '35 over Jan - Sept 1933	
	Per Ton 1	Per Ton 2	Per Ton 3	Per Ton 4	Per Ton 5	% Increase 6	Per Ton 7	% Increase 8	Per Ton 9	Per Ton 10	Per Ton 11	Per Ton 12	Per Ton 13	% Increase 14	Per Ton 15	% Increase 16	Per Ton 17	% Increase 18	Per Ton 19	% Increase 20
DIVISION I																				
Eastern Pa.	$.810	1.074	1.230	1.700	.264	32.6	.470	38.2	1.066	1.295	1.719	2.057	.229	21.5	.338	19.7	.485	59.9	.827	67.2
Western Pa.	.626	1.005	1.120	1.650	.379	60.5	.530	47.3	.990	1.190	1.668	1.909	.200	20.2	.241	14.4	.564	90.1	.789	70.4
Ohio	.654	.959	1.010	1.660	.305	46.6	.650	64.4	.953	1.152	1.679	1.858	.199	20.9	.179	10.7	.498	76.1	.848	84.0
Michigan	—	1.618	2.820	2.960	—	—	.140	5.0	1.570	1.931	2.921	3.163	.361	23.0	.242	8.3	—	—	3.43	12.2
Panhandle	—	.971	1.000	1.550	—	—	.550	55.0	1/ 982	1.128	1/ 1.567	1.754	.146	14.9	.187	11.9	—	—	.754	75.4
No. W. Va.	.483	.776	.780	1.310	293	60.7	.530	67.9	775	.996	1.332	1.621	.221	28.5	.289	21.7	.513	106.2	.841	107.8
TOTAL DIV. I NORTH	2/	.981	1.040	1.610	—	—	.530	49.1	974	1.186	1.634	1.900	.212	21.8	.266	16.3	—	—	.820	75.9
Southern No. 1	—	.960	1.020	1.700	—	—	.680	66.7	943	1.146	1.739	2.037	.203	21.5	.298	17.1	—	—	1.017	99.7
Southern No. 2	.563	.891	.980	1.540	.328	58.3	.560	57.1	.876	1.088	1.568	1.845	.212	24.2	.277	17.7	.525	93.3	.865	88.3
Md — Upper Potomac	.708	1.142	1.230	1.760	.434	61.3	.530	43.1	1.121	1.321	1.773	2.108	.200	17.8	.335	18.9	.413	86.6	.878	71.4
Western Kentucky		.708	.750	1.180	—	—	.430	57.3	2/	—	3/	—	—	—	—	—	—	—	—	—
TOTAL DIV. I SOUTH	2/	.911	.980	1.580	—	—	.600	61.2	910	1.119	1.644	1.938	.209	23.0	.294	17.9	—	—	.958	97.8
TOTAL DIV. I	2/	.947	1.030	1.600	—	—	.571	55.3	943	1.152	1.639	1.919	.209	22.2	.280	17.1	—	—	.889	86.3
DIVISION II (Deep & Strip)																				
Illinois	—	.791	1.360	1.520	—	—	.160	11.8	.775	.846	1.534	1.640	.091	11.7	.106	6.9	—	—	.280	20.6
Indiana	—	.613	1.180	1.440	—	—	.260	22.0	.605	.719	1.442	1.599	.114	18.8	.157	10.9	—	—	.419	35.5
Iowa	—	1.447	2.270	2.340	—	—	.070	3.1	3/	—	3/	—	—	—	—	—	—	—	—	—
TOTAL DIVISION II	—	.777	1.360	1.540	—	—	.180	13.2	730	.829	1.509	1.629	.099	13.6	.120	8.0	—	—	4/ .269	4/ 19.8
DIVISION III																				
Alabama	.677	1.112	1.480	1.870	.435	64.3	.390	26.4	1.109	3/ 1.401	1.923	3/ 2.287	.302	27.2	.364	18.9	.734	108.4	.807	54.5
TOTAL DIVISION III	.747	1.130	1.490	1.850	.383	51.3	.360	24.2	1.122	3/ 1.413	1.910	3/ 2.256	.291	25.9	.344	18.0	.666	89.2	.764	51.3

1/ Does not include March, 1934

2/ Incomplete date.

3/ Data for period April 1934 through December 1934 only.

4/ Averages for Total Division II are not mathematically correct because Iowa was included in 1933 data, but was not available for 1933.

SOURCES:
U.S. Bureau of Mines.
N.R.A. Bituminous Coal Statistics.

PREPARED BY:
Bituminous Coal Unit, Division of Review,
N.R.A., under the direction of F.E. Berquist.

OFFICE OF THE NATIONAL RECOVERY ADMINISTRATION

THE DIVISION OF REVIEW

THE WORK OF THE DIVISION OF REVIEW

Executive Order No. 7075, dated June 15, 1935, established the Division of Review of the National Recovery Administration. The pertinent part of the Executive Order reads thus:

> The Division of Review shall assemble, analyze, and report upon the statistical information and records of experience of the operations of the various trades and industries heretofore subject to codes of fair competition, shall study the effects of such codes upon trade, industrial and labor conditions in general, and other related matters, shall make available for the protection and promotion of the public interest an adequate review of the effects of the Administration of Title I of the National Industrial Recovery Act, and the principles and policies put into effect thereunder, and shall otherwise aid the President in carrying out his functions under the said Title. I hereby appoint Leon C. Marshall, Director of the Division of Review.

The study sections set up in the Division of Review covered these areas: industry studies, foreign trade studies, labor studies, trade practice studies, statistical studies, legal studies, administration studies, miscellaneous studies, and the writing of code histories. The materials which were produced by these sections are indicated below.

Except for the Code Histories, all items mentioned below are scheduled to be in mimeographed form by April 1, 1936.

THE CODE HISTORIES

The Code Histories are documented accounts of the formation and administration of the codes. They contain the definition of the industry and the principal products thereof; the classes of members in the industry; the history of code formation including an account of the sponsoring organizations, the conferences, negotiations and hearings which were held, and the activities in connection with obtaining approval of the code; the history of the administration of the code, covering the organization and operation of the code authority, the difficulties encountered in administration, the extent of compliance or non-compliance, and the general success or lack of success of the code; and an analysis of the operation of code provisions dealing with wages, hours, trade practices, and other provisions. These and other matters are canvassed not only in terms of the materials to be found in the files, but also in terms of the experiences of the deputies and others concerned with code formation and administration.

The Code Histories, (including histories of certain NRA units or agencies) are not mimeographed. They are to be turned over to the Department of Commerce in typewritten form. All told, approximately eight hundred and fifty (850) histories will be completed. This number includes all of the approved codes and some of the unapproved codes. (In Work Materials No. 18, Contents of Code Histories, will be found the outline which governed the preparation of Code Histories.)

(In the case of all approved codes and also in the case of some codes not carried to final approval, there are in NRA files further materials on industries. Particularly worthy of mention are the Volumes I, II and III which constitute the material officially submitted to the President in support of the recommendation for approval of each code. These volumes

set forth the origination of the codes, the sponsoring group, the evidence advanced to support the proposal, the report of the Division of Research and Planning on the industry, the recommendations of the various Advisory Boards, certain types of official correspondence, the transcript of the formal hearing, and other pertinent matter. There is also much official information relating to amendments, interpretations, exemptions, and other rulings. The materials mentioned in this paragraph were of course not a part of the work of the Division of Review.)

THE WORK MATERIALS SERIES

In the work of the Division of Review a considerable number of studies and compilations of data (other than those noted below in the Evidence Studies Series and the Statistical Material Series) have been made. These are listed below, grouped according to the character of the material. (In Work Materials No. 17, Tentative Outlines and Summaries of Studies in Process, the materials are fully described).

Industry Studies

Automobile Industry, An Economic Survey of
Bituminous Coal Industry under Free Competition and Code Regulation, Economic Survey of
Electrical Manufacturing Industry, The
Fertilizer Industry, The
Fishery Industry and the Fishery Codes
Fishermen and Fishing Craft, Earnings of
Foreign Trade under the National Industrial Recovery Act
  Part A - Competitive Position of the United States in International Trade 1927-29 through 1934.
  Part B - Section 3 (e) of NIRA and its administration.
  Part C - Imports and Importing under NRA Codes.
  Part D - Exports and Exporting under NRA Codes.
Forest Products Industries, Foreign Trade Study of the
Iron and Steel Industry, The
Knitting Industries, The
Leather and Shoe Industries, The
Lumber and Timber Products Industry, Economic Problems of the
Men's Clothing Industry, The
Millinery Industry, The
Motion Picture Industry, The
Migration of Industry, The: The Shift of Twenty-Five Needle Trades From New York State, 1926 to 1934
National Labor Income by Months, 1929-35
Paper Industry, The
Production, Prices, Employment and Payrolls in Industry, Agriculture and Railway Transportation, January 1923, to date
Retail Trades Study, The
Rubber Industry Study, The
Textile Industry in the United Kingdom, France, Germany, Italy, and Japan
Textile Yarns and Fabrics
Tobacco Industry, The
Wholesale Trades Study, The
Women's Neckwear and Scarf Industry, Financial and Labor Data on

Women's Apparel Industry, Some Aspects of the

Trade Practice Studies

Commodities, Information Concerning: A Study of NRA and Related Experiences in Control
Distribution, Manufacturers' Control of: Trade Practice Provisions in Selected NRA Codes
Distributive Relations in the Asbestos Industry
Design Piracy: The Problem and Its Treatment Under NRA Codes
Electrical Mfg. Industry: Price Filing Study
Fertilizer Industry: Price Filing Study
Geographical Price Relations Under Codes of Fair Competition, Control of
Minimum Price Regulation Under Codes of Fair Competition
Multiple Basing Point System in the Lime Industry: Operation of the
Price Control in the Coffee Industry
Price Filing Under NRA Codes
Production Control in the Ice Industry
Production Control, Case Studies in
Resale Price Maintenance Legislation in the United States
Retail Price Cutting, Restriction of, with special Emphasis on The Drug Industry.
Trade Practice Rules of The Federal Trade Commission (1914-1936): A classification for comparision with Trade Practice Provisions of NRA Codes.

Labor Studies

Cap and Cloth Hat Industry, Commission Report on Wage Differentials in
Earnings in Selected Manufacturing Industries, by States, 1933-35
Employment, Payrolls, Hours, and Wages in 115 Selected Code Industries 1933-35
Fur Manufacturing, Commission Report on Wages and Hours in
Hours and Wages in American Industry
Labor Program Under the National Industrial Recovery Act, The
  Part A. Introduction
  Part B. Control of Hours and Reemployment
  Part C. Control of Wages
  Part D. Control of Other Conditions of Employment
  Part E. Section 7(a) of the Recovery Act
Materials in the Field of Industrial Relations
PRA Census of Employment, June, October, 1933
Puerto Rico Needlework, Homeworkers Survey

Administrative Studies

Administrative and Legal Aspects of Stays, Exemptions and Exceptions, Code Amendments, Conditional Orders of Approval
Administrative Interpretations of NRA Codes
Administrative Law and Procedure under the NIRA
Agreements Under Sections 4(a) and 7(b) of the NIRA
Approved Codes in Industry Groups, Classification of
Basic Code, the -- (Administrative Order X-61)
Code Authorities and Their part in the Administration of the NIRA
  Part A. Introduction
  Part B. Nature, Composition and Organization of Code Authorities

Part C. Activities of the Code Authorities
Part D. Code Authority Finances
Part E. Summary and Evaluation
Code Compliance Activities of the NRA
Code Making Program of the NRA in the Territories, The
Code Provisions and Related Subjects, Policy Statements Concerning
Content of NIRA Administrative Legislation
Part A. Executive and Administrative Orders
Part B. Labor Provisions in the Codes
Part C. Trade Practice Provisions in the Codes
Part D. Administrative Provisions in the Codes
Part E. Agreements under Sections 4(a) and 7(b)
Part F. A Type Case: The Cotton Textile Code
Labels Under NRA, A Study of
Model Code and Model Provisions for Codes, Development of
National Recovery Administration, The: A Review of its Organization and Activities
NRA Insignia
President's Reemployment Agreement, The
President's Reemployment Agreement, Substitutions in Connection with the
Prison Labor Problem under NRA and the Prison Compact, The
Problems of Administration in the Overlapping of Code Definitions of Industries and Trades, Multiple Code Coverage, Classifying Individual Members of Industries and Trades
Relationship of NRA to Government Contracts and Contracts Involving the Use of Government Funds
Relationship of NRA with States and Municipalities
Sheltered Workshops Under NRA
Uncodified Industries: A Study of Factors Limiting the Code Making Program

Legal Studies

Anti-Trust Laws and Unfair Competition
Collective Bargaining Agreements, the Right of Individual Employees to Enforce
Commerce Clause, Federal Regulation of the Employer-Employee Relationship Under the
Delegation of Power, Certain Phases of the Principle of, with Reference to Federal Industrial Regulatory Legislation
Enforcement, Extra-Judicial Methods of
Federal Regulation through the Joint Employment of the Power of Taxation and the Spending Power
Government Contract Provisions as a Means of Establishing Proper Economic Standards, Legal Memorandum on Possibility of
Industrial Relations in Australia, Regulation of
Intrastate Activities Which so Affect Interstate Commerce as to Bring them Under the Commerce Clause, Cases on
Legislative Possibilities of the State Constitutions
Post Office and Post Road Power -- Can it be Used as a Means of Federal Industrial Regulation?
State Recovery Legislation in Aid of Federal Recovery Legislation History and Analysis
Tariff Rates to Secure Proper Standards of Wages and Hours, the Possibility of Variation in
Trade Practices and the Anti-Trust Laws
Treaty Making Power of the United States
War Power, Can it be Used as a Means of Federal Regulation of Child Labor?

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THE EVIDENCE STUDIES SERIES

The Evidence Studies were originally undertaken to gather material for pending court cases. After the Schechter decision the project was continued in order to assemble data for use in connection with the studies of the Division of Review. The data are particularly concerned with the nature, size and operations of the industry; and with the relation of the industry to interstate commerce. The industries covered by the Evidence Studies account for more than one-half of the total number of workers under codes. The list of those studies follows:

Automobile Manufacturing Industry
Automotive Parts and Equipment Industry
Baking Industry
Boot and Shoe Manufacturing Industry
Bottled Soft Drink Industry
Builders' Supplies Industry
Canning Industry
Chemical Manufacturing Industry
Cigar Manufacturing Industry
Coat and Suit Industry
Construction Industry
Cotton Garment Industry
Dress Manufacturing Industry
Electrical Contracting Industry
Electrical Manufacturing Industry
Fabricated Metal Products Mfg. and Metal Finishing and Metal Coating Industry
Fishery Industry
Furniture Manufacturing Industry
General Contractors Industry
Graphic Arts Industry
Gray Iron Foundry Industry
Hosiery Industry
Infant's and Children's Wear Industry
Iron and Steel Industry
Leather Industry
Lumber and Timber Products Industry
Mason Contractors Industry
Men's Clothing Industry
Motion Picture Industry
Motor Vehicle Retailing Trade
Needlework Industry of Puerto Rico
Painting and Paperhanging Industry
Photo Engraving Industry
Plumbing Contracting Industry
Retail Lumber Industry
Retail Trade Industry
Retail Tire and Battery Trade Industry
Rubber Manufacturing Industry
Rubber Tire Manufacturing Industry
Shipbuilding Industry
Silk Textile Industry
Structural Clay Products Industry
Throwing Industry
Trucking Industry
Waste Materials Industry
Wholesale and Retail Food Industry
Wholesale Fresh Fruit and Vegetable Industry
Wool Textile Industry

THE STATISTICAL MATERIALS SERIES

This series is supplementary to the Evidence Studies Series. The reports include data on establishments, firms, employment, payrolls, wages, hours, production capacities, shipments, sales, consumption, stocks, prices, material costs, failures, exports and imports. They also include notes on the principal qualifications that should be observed in using the data, the technical methods employed, and the applicability of the material to the study of the industries concerned. The following numbers appear in the series:
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Asphalt Shingle and Roofing Industry
Business Furniture
Candy Manufacturing Industry
Carpet and Rug Industry
Cement Industry
Cleaning and Dyeing Trade
Coffee Industry
Copper and Brass Mill Products Industry
Cotton Textile Industry
Electrical Manufacturing Industry
Fertilizer Industry
Funeral Supply Industry
Glass Container Industry
Ice Manufacturing Industry
Knitted Outerwear Industry
Paint, Varnish, and Lacquer, Mfg. Industry
Plumbing Fixtures Industry
Rayon and Synthetic Yarn Producing Industry
Salt Producing Industry

THE COVERAGE

The original, and approved, plan of the Division of Review contemplated resources sufficient (a) to prepare some 1200 histories of codes and NRA units or agencies, (b) to consolidate and index the NRA files containing some 40,000,000 pieces, (c) to engage in extensive field work, (d) to secure much aid from established statistical agencies of government, (e) to assemble a considerable number of experts in various fields, (f) to conduct approximately 25% more studies than are listed above, and (g) to prepare a comprehensive summary report.

Because of reductions made in personnel and in use of outside experts, limitation of access to field work and research agencies, and lack of jurisdiction over files, the projected plan was necessarily curtailed. The most serious curtailments were the omission of the comprehensive summary report; the dropping of certain studies and the reduction in the coverage of other studies; and the abandonment of the consolidation and indexing of the files. Fortunately, there is reason to hope that the files may yet be cared for under other auspices.

Notwithstanding these limitations, if the files are ultimately consolidated and indexed the exploration of the NRA materials will have been sufficient to make them accessible and highly useful. They constitute the largest and richest single body of information concerning the problems and operations of industry ever assembled in any nation.

L. C. Marshall,
Director, Division of Review.

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